TESTIMONY OF JOHN D. WALKE

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NATURAL RESOURCES DEFENSE COUNCIL

HEARING ON "S.2662, THE GROWING AMERICAN

INNOVATION NOW (GAIN) ACT,"

BEFORE THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

U.S. SENATE

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TABLE OF CONTENTS

I. INTRODUCTION

Thank you, Chairman Barrasso and Ranking Member Carper for the opportunity to testify today. My name is John Walke. I am the clean air director and a senior attorney for the Natural Resources Defense Council (NRDC). NRDC is a nonprofit organization of scientists, lawyers, and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 1.3 million members and online activists nationwide, served from offices in New York, Washington, Los Angeles, San Francisco, Chicago, and Beijing.

I have worked at NRDC since 2000. Before that, I was a Clean Air Act attorney in the Office of General Counsel for the U.S. Environmental Protection Agency (EPA). Prior to that, I was an attorney in private practice where I represented corporations, industry trade associations and individuals. Having worked on air pollution issues for the entirety of my career, I have done a great deal of work relating to the New Source Review (NSR) provisions of the Clean Air Act (CAA). I believe the NSR provisions of the Act strike a responsible balance, requiring new and modified stationary sources of air pollution to protect our nation's air quality through appropriate pollution controls and other measures. I would like to thank the Committee for the opportunity to testify. I look forward to your questions.

New Source Review is a Clean Air Act pre-construction permitting program—with requirements for modern air pollution controls, offsets of any remaining emissions increases, air-quality impact analyses, and public participation—that imposes those requirements only when industrial facilities *significantly increase* emissions of regulated air pollutants like fine particulate matter ($PM_{2.5}$) pollution, sulfur dioxide (SO_2), or precursors to smog, such as nitrogen oxides (NO_x) or volatile organic compounds (VOCs).

Accordingly, any proposed NSR legislative or regulatory "reform" first should answer one simple question: will it let industry *pollute more*, and evade air pollution controls and other air quality safeguards? Unfortunately, when that question is asked about S.2662, the "Growing American Innovation Now (GAIN) Act," the answer is absolutely yes. This legislation would allow massive increases in dangerous air pollution from nearly 14,000 industrial emitting facilities across the United States. The bill is so extreme that it first repeals existing limits on emissions increases under longstanding Clean Air Act requirements, and then the legislation does not even limit the amount of dangerous air pollution increases that facilities could cause.

For all the reasons in this testimony, the Committee should reject this legislation and the amnesty it creates to increase dangerous air pollution across America and harm Americans.

I. BACKGROUND

The Clean Air Act requires an existing source to undergo NSR permitting whenever it makes a "modification," which is defined in the statute as, *inter alia*, any physical or operational

change that "increases the amount of any air pollutant emitted."[1] Nowhere in the Clean Air Act does Congress describe major stationary sources, modifications, or emissions increases as being measured in terms of hourly emissions rates. Emissions increases in tons per year are identified as the relevant metric in all instances in which Title I, parts C and D identify a magnitude of emissions.

The U.S. Court of Appeals for the D.C. Circuit has held that the Act "unambiguously defines 'increases' in terms of actual emissions."[2] The *New York I* court reached this result after evaluating the text and history of the Clean Air Act's New Source Review provisions, concluding that Congress was "conscious of the distinction between actual and potential emissions," and "use[d] the term 'emitted' to refer to actual emissions." The decision followed earlier precedent in *Alabama Power v. Costle*, 636 F.2d 323, 353 (D.C. Cir. 1979), in which the court held that the term "emit" is a "reference to some measure of actual emissions."

A. New Source Review & Actual Emissions Increases v. New Source Performance Standards & Potential Emissions Increases.

Congress enacted the Clean Air Act's NSR program in 1977, in order to limit air pollution beyond what had until that time been achieved by a prior program, called New Source Performance Standards, or NSPS.[3] The NSPS program had proven unsuccessful at curbing air pollution, and the NSR permitting requirements were added to minimize actual air pollution *increases* from new and modified sources.[4] I emphasize the word, increases. While Congress included a "grandfathering" exemption for existing sources, that exemption was not intended to be permanent, but rather existing sources were to be brought into the NSR program at the point when they made changes that would "*increase* emissions."[5]

As the Seventh Circuit stated in the important *Wisconsin Elec. Power Co. v. Reilly, or* "*WEPCO*" decision:

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[1] Section 111(a)(4) of the Act describes when a source is to be considered "modified": "The term 'modification' means any physical change in, or change in the method of operation of, a stationary source which *increases the amount* of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted." 42 U.S.C. § 7411(a)(4) (emphasis added). See 42 U.S.C. §7479(2)(C)(adopting §7411(a)(4) into the prevention of significant deterioration program definition of "modification"); 42 U.S.C. § 7501(4)(adopting §7411(a)(4) into the nonattainment new source review program).

[2] *New York v. EPA*, 413 F.3d 3, 39-40 (D.C. Cir. 2005) (*New York I*); see also *New York v. EPA*, 443 F.3d 880, 885, 889-90 (D.C. Cir. 2006) (*New York II*) (holding that "to the extent industry…rel[ies] on the NSPS regime to reargue their position that 'modifications' require an increase in maximum emission rates, that issue was resolved in *New York I*.").

[3] See generally, 40 C.F.R. Part 60: Standards of Performance for New Stationary Sources.

[4] Statement of Sen. Muskie, 123 Cong. Rec. 18022 (June 8, 1977), see also *Wisconsin Elec. Power Co. v. Reilly*, 893 F.2d 901, 904 (7th Cir. 1990) ("*WEPCO*").

[5] *Alabama Power Co. v. Costle*, 636 F.2d 323, 350, 400 (D.C. Cir. 1979) (emphasis added).

> Members of the House recognized that "building control technology into new plants at the time of construction will plainly be less costly then [sic] requiring retrofit when pollution control ceilings are reached." H.R. Rep. No. 294, 95th Cong., 1st Sess. 185, reprinted in 1977 U.S. Code Cong. & Admin. News at 1264. But Congress did not permanently exempt existing plants from these requirements; section 7411(a)(2) provides that existing plants that have been modified are subject to the Clean Air Act programs at issue here.[6]

In fact, beyond balancing the goals of cleaner air for the nation with reduced disruption for older facilities, the modification trigger was, to the Seventh Circuit, a means of "forcing" investment in cleaning the nation's airsheds:

> Congress intended to stimulate the advancement of pollution control technology. See, *e.g.*, S. Rep. No. 91-1196, 91st Cong., 2d Sess. 17 (1970) ("Standards of performance should provide an incentive for industries to work toward constant improvement in techniques for preventing and controlling emissions from stationary sources. . . ."). The development of emissions control systems is not furthered if operators could, without exposure to the standards of the 1977 Amendments, increase production (and pollution) through the extensive replacement of deteriorated generating systems.[7]

The NSR program thus was added as an additional layer of protection, beyond the NSPS, in order to limit or prevent actual emissions increases to a degree greater than had been achieved by the NSPS alone, and to ensure that advances in pollution control since the NSPS was established, and any source-specific pollution control opportunities, would be captured. NSPS establish national pollution limits for categories of sources, based on an EPA determination of the best system of emissions reduction. NSR, on the other hand, is source-specific—to ensure that a source with the potential to adversely impact air quality is required to control its actual annual emissions *increases*.

Congress was directing additional air pollution controls when it adopted the NSR program. The different focus of the two programs led EPA to conclude that there must be a stronger legal basis for the Agency to promulgate exemptions to the NSR program than the fact that exemptions existed in the NSPS program:

> The [NSR/PSD] review is a tool for air quality management and comprehensive consideration of increases of any pollutant regulated under the Act. The NSPS exemption is inconsistent with this approach. … The fact that both programs use the definition of modification contained in section 111 of the Act is not, in itself, sufficient to prove that Congress intended the NSPS exemptions then in effect would automatically be [sic] incorporated into PSD. … Apparently the only legislative history on the subject is a remark that Congress intended to conform the meaning of "modification" for PSD purposes to "other parts of the act [(1233 Cong. Rec. H11957)]. Given the distinct differences between the NSR regulatory processes promulgated in response to the 1977

[6] *WEPCO*, 893 F.2d at 909 (emphasis added).
[7] *Id.* at 909-10 (citation omitted).

> amendments and the preexisting NSPS regulations defining "modification," it seems clear that Congress desired to conform the usage of that term only in the broad sense.[8]

The NSPS program, introduced in the 1970 amendments to the Clean Air Act, grew out of Congressional concern that the state planning process then in effect "was insufficient by itself to achieve the goal of protecting and *improving* air quality:"[9]

> By 1977, however, states had made little headway in the battle for clean air. Congress recognized that the existing NSPS program was not sufficient either to clean the air in the most polluted areas of the country, or to keep the air clean in areas that currently complied with ambient air quality standards. In addition to strengthening the NSPS program, Congress determined that "[s]ome mechanism [was] needed to assure that before new and expanded facilities are permitted, a State demonstrate that these facilities can be accommodated within its overall plan to provide for attainment of air quality standards."[10]

Accordingly, Congress adopted the NSR program.[11]

Among other things, an NSR preconstruction permit requires a case-by-case determination of Best Available Control Technology ("BACT") (or Lowest Achievable Emissions Rates, or "LAER," if the source is locating in a nonattainment area) rather than the automatic application of NSPS, and a demonstration that emissions from the source will not cause or contribute to the deterioration of air quality. In addition, Congress chose to place much greater emphasis on public health and impacts on air quality, and less emphasis on economic feasibility, in designing the NSR program. For example, in the Conference Committee Report for the 1977 Amendments, in a discussion of the LAER requirement for the NSR program, the Committee stated that "[i]n determining whether an emission rate is achievable, cost will have to be taken into account, but cost factors in the nonattainment context will have somewhat less weight than in determining new source performance standards under section 111. Of course, health considerations are of *primary* importance."[12]

Although Congress incorporated the statutory NSPS definition of modification into the NSR program, EPA appropriately adopted different definitions of modification in order to

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[8] Memorandum from Gerald A. Emison, Director, Office of Air Quality and Planning, U.S. EPA, to Director, Air Management Divisions, Regions I, III, V, and IX[;] Director, Air and Waste Management Division Region II[;] Director, Air Pesticides, and Toxic Management Division Region IV and VI[;] [and] Director, Air and Toxics Division Regions VII, VIII, and X, "Prevention of Significant Deterioration (PSD) Definition of 'Modification,'" at 2-3 (July 7, 1986).

[9] *ASARCO v. EPA*, 578 F.2d 319, 327 (D.C. Cir. 1978) (emphasis in original).

[10] S. Rep. No 95-127, *55 (May 10, 1977).

[11] 42 U.S.C. §§ 7470-7479 (Prevention of Significant Deterioration); 7501-7515 (nonattainment areas).

[12] 95 Cong. Conf. Report H. Rept. 564, 175 (Aug. 3, 1977). See also House Rep. No. 95-294, *214-15 (emphasis added).

comply with the different statutory purposes of the two programs. Under NSPS, EPA measures an "increase [in] the [emission rate] of any air pollutant" for the purpose of determining whether a modification has occurred in terms of hourly emission rate increases in order to be consistent with the program's industry-wide focus.[13] Under the NSR definition of modification, by contrast, emissions increases are measured in terms of total annual emissions, in order to be consistent with the NSR program's local and ambient air quality-based purpose:[14]

> Courts have long recognized the different purposes and requirements of the NSR and NSPS programs, and have rejected attempts to import provisions and rationales from one program to the other. In *Alabama Power*, the D.C. Circuit upheld EPA's application of the "bubble concept" to calculate emission increases in NSR, after having rejected its use in the NSPS program.[15] As the Court explained: "EPA has latitude to adopt definitions of the component terms of 'source' that are different in scope from those that may be employed for NSPS and other clean air programs, due to differences in the purpose and structure of the two programs."[16]

In *WEPCO*, the Seventh Circuit observed that by 1977 the NSPS program, with its focus on hourly rates of emissions, had resulted in "only varying degrees of success in controlling pollution in different parts of the country."[17] Consequently, Congress added the PSD program, "concerned with increases in total annual emissions" from major sources of pollution rather than its hourly rate of emissions, and ensuring that sources "in relatively unpolluted areas would not allow a decline of air quality . . . ."[18] Likewise, the Ninth Circuit has, on at least two occasions, rejected attempts to import provisions and rationales from one program to the other. As stated in *Citizens for Clean Air v. EPA*: "While the NSPS program and the PSD are both interrelated parts of a comprehensive federal legislative effort to protect and enhance this national's air quality, the *two programs play different roles in achieving that broad general goal*."[19]

> As the Seventh Circuit has observed:
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> To determine whether a physical change constitutes a modification for purposes of NSPS, the EPA must determine whether the change increases the facility's *hourly rate* of

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[13] 40 C.F.R. § 60.14(a), (b).
[14] *Id.* § 51.165(v), (vi). See 57 Fed. Reg. 32314, 32316 (July 21, 1992) (Emissions increase component of modification definition differs under NSPS and NSR, reflecting distinct purposes of the two programs).
[15] 636 F.2d 323 (D.C. Cir. 1979). *See also ASARCO v. EPA*, 578 F.2d 319 (D.C. Cir. 1978).
[16] *Id.* at 397-98. *See also Potomac Elec. Power Co. v. EPA*, 650 F.2d 509, 518 (4th Cir. 1981) (upholding EPA's different construction of the definition of "stationary source" based on "a significant difference between the PSD and NSPS programs," noting the emphasis in PSD on new air emissions).
[17] *WEPCO,* 893 F.2d at 904.
[18] *Id.*
[19] 959 F.2d 839, 849 (9th Cir. 1992)(emphasis added).

> emission. . . . For PSD purposes, current EPA regulations provide that an increase in the *total amount* of emissions activates the modification provisions of the regulations.[20]

Likewise, in the preamble to its *WEPCO* rule, EPA pointed to the difference in how the emissions increase is measured as the primary distinguishing characteristic between the two programs: "[The] two-step test for determining whether activities at an existing facility constitute a modification subject to new source requirements . . . [branches apart at the emissions increase step,] reflecting the fundamental distinctions between the … NSPS *and the air quality-based provisions of NSR*."[21]

Accordingly, because of NSR's focus on a source's location and its potential effect on air quality and the environment, the source's hours of operation and overall annual emissions are key factors in determining whether NSR is triggered. Under an NSPS hourly emissions rate approach, a physical change to a source can result in an increase in hours of operation or an increase in production, and accordingly a significant increase in emissions, and still escape NSR and its air pollution controls and accompanying air quality protections.[22]

I turn now to the air pollution increases that EPA regulations deem permissible, or that require air pollution controls and/or emission limitations, under the two programs. EPA has established regulatory "significance thresholds," describing the level of actual tons per year increases of air pollutants above which impacts will not be *de minimis* in nature, and therefore would trigger NSR. See 40 C.F.R. § 52.21(b)(23)(i), (establishing 40 tons per year significance thresholds for NO_x and SO_2, for example). In *Alabama Power Co. v. Costle,* the D.C. Circuit Court of Appeals, while recognizing the NSR program's focus on minimizing actual annual emissions increases, indicated EPA could (upon making specified rigorous showings) define levels of actual (tons per year) emissions increases which would produce no regulatory benefit under the statute. See *Alabama Power*, 636 F.2d at 360-61, 400 (describing that authority to craft *de minimis* exemption is potentially available "when the burdens of regulation yield a gain of trivial or no value. That implied authority is not available for a situation where the regulatory function does provide benefits, in the sense of furthering the regulatory objectives, but the agency concludes that the acknowledged benefits are exceeded by the costs.").

Moreover, in the 1990 Clean Air Act amendments, Congress adopted a special *de minimis* rule for sources that emit volatile organic compounds, and couched that rule as well in terms of tons per year increases, not hourly emissions rates. See CAA § 182(c)(6), 42 U.S.C. § 7511a(c)(6) (discussing NSR applicability in areas classified as severe for ozone non-attainment). Specifically, that provision states:

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[20] *WEPCO*, 893 F.2d at 905 (citations omitted, emphasis in original).
[21] 57 Fed. Reg. 32,314, 32316 (July 21, 1992) (emphasis added).
[22] Joint Comments of Environmental and Public Health Organizations on the New Source Review Regulatory Changes Proposed With EPA's Proposed Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program, Docket No. EPA-HQ-OAR-2017-0355 (Oct. 31, 2018).

> The new source review provisions under this part shall ensure that increased emissions of volatile organic compounds resulting from any physical change in, or change in the method of operation of, a stationary source located in the [serious nonattainment] area shall not be considered *de minimis* for purposes of determining the applicability of the permit requirements established by this chapter unless the increase in net emissions of such air pollutant from such source *does not exceed 25 tons when aggregated with all other net increases in emissions from the source over any period of 5 consecutive calendar years which includes the calendar year in which such increase occurred.*[23]

Immediately following that provision, Congress adopted another provision creating a "special rule for modifications of sources emitting less than 100 tons," which applies whenever such a source makes a change "except for a *de minimis* increase" as established in § 182(c)(6), 42 U.S.C. § 7511a(c)(6). See CAA § 182(c)(7), 42 U.S.C. § 7511a(c)(7). Thus, the applicability of this provision depends on whether a change would lead to more than a *de minimis* increase, which § 182(c)(6), 42 U.S.C. § 7511a(c)(6) defines in terms of the annual tonnage increase resulting from a planned change. *Id.* The same is true for § 182(c)(8), 42 U.S.C. § 7511a(c)(8), which establishes a "special rule for modifications of sources emitting 100 tons or more." These provisions confirm that Congress understood, and intended that NSR would focus on actual, annual emissions, not hourly emissions or output.

B. EPA Has Repeatedly Rejected the Maximum Achievable Pollution Rate Approach in S.2662 Because it Harms Air Quality.

A maximum hourly pollution rate test—like that in S.2662 and the NSPS program—measures increases in an emissions unit's potential emissions rate, rather than its actual emissions rate, as the NSR program does.[24] Accordingly, changes at a facility that do not

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[23] 42 U.S.C. § 7511(c)(6)(emphasis added).

[24] *See, e.g.,* 68 Fed. Reg. 61,248,61,272 (Oct. 27, 2003) ("The NSPS program requires a change to result in an increase in the hourly *potential to emit* of the facility. 40 CFR 60.14(a)-(b). In contrast, under NSR, we require an increase in annual emissions. *E.g.*, 40 CFR 51.165(a)(1)(x).") (emphasis added). Numerous industry statements confirm that maximum hourly emissions rate tests are "potential"-based emissions increase tests. See Joint Brief of Industry Petitioners, *New York v. EPA*, 431 F.3d 801 (D.C. Cir. 2005) ("*New York I*") at 6 (characterizing an increase in a facility's maximum hourly emissions rate as an increase in its existing capacity to emit, and recognizing that to be a modification under NSPS regulations); at 8 (the NSPS modification provision applies to "activities that increase a unit's 'potential' emission rate"); at 9 (for a project to "create 'new' capacity to emit," it "must first increase an existing facility's maximum achievable emissions rate"); *id.* ("Activity that increases an existing facility's maximum achievable emissions rate is referred to hereinafter as 'NSPS modification activity.'"); at 10-11 (equating "potential to emit" with a facility's "existing design capacity."); at 23 (equating a unit "maximum emissions rate" with its "capacity to emit"); at 26 (NSPS regulatory "'modification' is a physical or operational-method change that creates new pollution capacity – i.e., that increases an existing unit's *maximum emissions rate*) (emphasis in original); *id*. (equating the preceding test to a change that "increases the *potential emission rate*" of a regulated pollutant") (emphasis in original); see also Joint Brief of Industry Intervenors, *New York I*, at 3 (Alleging

increase a unit's potential emissions rate may nonetheless increase actual harmful air pollutants by very significant amounts and evade air pollution control equipment; avoid air quality impact analyses; escape the need for emissions offsets in areas experiencing unsafe air ("nonattainment" areas); worsen local and air quality; and harm public health.

Under S.2662, changes that significantly increase dangerous, actual emissions into America's skies would be exempt from air pollution controls & air quality safeguards. The legislation concerns itself only with increases in maximum hourly emission rates—and in one section even allows increases above a facility's maximum hourly emission rates—but the bill does not limit total emissions or protect health-based National Ambient Air Quality Standards (NAAQS) or statutory "increments" of clean air resources in areas meeting those health standards. It is clear that due to the massive emissions increases that are allowed to result from the bill, its newly created amnesty would not in any way comport with the ambient air quality protection or health purposes of the Clean Air Act.

EPA has concluded repeatedly that a maximum hourly emissions test, like that in S.2662, would allow changes that cause significant actual emission increases to evade pollution controls and other safeguards. For example, in 1996, EPA explained that it did not intend to adopt an hourly emissions increase test supported by industry, because:

> For example, assume the emissions unit at the widget factory that is emitting 10 pounds an hour but has historically operated at 40 percent capacity due at first to operating cost, but with age, reduced efficiency and reliability. Under the [industry approach], the owner could modernize the unit, thus lowering the operating costs and increasing efficiency and reliability. *This change will allow the owner to use the machine at much higher levels (e.g., more hours per day or week) than it had in the past. As a result, actual emissions (measured in tpy) could more than double due to the increase in utilization even though hourly potential emissions remain the same*.

61 Fed. Reg. 38,250, 38,269 (July 23, 1996) (emphasis added). Likewise, when the Bush Administration EPA squarely rejected industry's proposed hourly emissions test in 2002, the agency explained that an hourly test "could sanction greater actual emissions increases to the environment, often from older facilities, without any preconstruction review." 67 Fed. Reg. 80,185, 80,205 (December 31, 2002). *See also, id.* ("actual emissions increases resulting from unreviewed projects could go largely undocumented until a [Prevention of Significant Deterioration] ("PSD") review is performed by a new or modified facility that ultimately must undergo review. By that time, however, a violation of an [air quality] increment could have

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that "EPA established a regulatory definition of "modification" [under NSPS], which provided that the determination of whether an emissions increase occurs is made by reviewing whether maximum emissions after a change would be greater than maximum emissions at full capacity before the change, *i.e.*, a "potential-to-potential" test. 40 C.F.R. § 60.14; s*ee* 67 FR 80,199 (2002)."); & at 11 ("'potential-to-potential' test" compares *"*maximum emissions before a change to maximum emissions after a change.") & 12 (linking increases in potential emissions rate to operation at full design capacity) & 13 ("increase in a major source's "potential" emissions, *i.e.*, in the source's maximum pre-change emissions level.")

unknowingly occurred."), *id.* ("We agree that a potential-to-potential test for major NSR applicability could lead to unreviewed increases in emissions that would be detrimental to air quality.").

One significant problem with the hourly emissions rate test concerns the vast gulf between actual and allowable emissions at major industrial facilities in areas that EPA studied. As EPA found following its analysis of Texas and Illinois emissions data:

> The results of the Texas and Illinois analysis indicate that typical source operation frequently does result in actual emissions that are substantially below allowable emissions levels. In these two States, actual emissions represent from 30 to 86 percent of the allowable emissions, depending on source category and pollutant.

61 Fed. Reg. at 38,270; see generally "Results of Data Gathering and Analysis Activities for the CMA Exhibit B Settlement Agreement," Prepared for Dennis Crumpler, U.S. EPA, by Radian Corporation (Nov. 1988), Appendix F. In other words, the delta between actual and allowable emissions under an hourly potential test for NSR would allow individual sources to increase actual emissions by more than a factor of three, without triggering NSR.

These data are significant because there was *no* instance in EPA's analysis in which an electric generating unit ("EGU") would not have been allowed to increase its hourly or annual emissions *by at least 50%* under an hourly emissions rate test. Again, this is due solely to the significant gap between actual and allowable emissions. Fifty percent increases were on the low end under EPA's study, however, with emissions increases *over 100% and 200%* more the norm. EPA included this study in the docket for a 2002 Bush EPA NSR rulemaking that rejected an hourly emissions test for NSR.

In 2005, EPA issued a proposed rulemaking, entitled "Prevention of Significant Deterioration, Nonattainment New Source Review, and New Source Performance Standards: Emissions Test for Electric Generating Units," proposing hourly emissions rate approaches for NSR. See 70 Fed. Reg. 61,081 (October 20, 2005). Section IV.F of the proposal contained a section entitled "Benefits of Maximum Achievable Hourly Emissions Test." *See id*. at 61,093. The most glaring characteristic of this section is the fact that not even EPA itself could ascribe a single air quality or public health-related benefit to its proposed maximum hourly emissions rate tests. For the most sweeping revision to the way that emissions increases are calculated under the NSR and NSPS programs, it was highly revealing that EPA identified only air quality *disbenefits*. Instead of public health or air quality benefits, EPA described benefits that redound entirely in favor of industry and against Americans' health and environment: the agency claimed the proposals will "promote the safety, reliability and efficiency of EGUs," and improve facilities' "productive capacity." *Id.* at 61,094.

EPA conducted a briefing for the public about the 2005 NSR proposal on October 14th, 2005 in the EPA headquarters building at Ariel Rios. I attended that briefing. At this briefing, I posed a series of questions to agency officials about the 2005 proposal, the 2002 NSR analysis discussed above, any new analysis conducted by EPA since then in support of its proposal, and

the agency's regulatory experience with the NSPS modification provision. I relate my questions and the responses by the agency's officials here.

I asked the EPA officials whether the agency had conducted any new analysis or data gathering similar to the 2002 NSR analysis examined here, to determine what the gap might be for EGUs between actual emissions, and allowable emissions under an hourly emissions rate test. The EPA official admitted that the agency had not.[25] I have confirmed that there was no such analysis or data in the 2005 EPA rulemaking docket apart from the 2002 analysis, which showed very substantial gaps between actual and allowable emissions for EGUs.

I asked the EPA officials whether the agency knew what the average or typical delta was between actual and allowable emissions for EGUs. The EPA official admitted that the agency did not know. I asked whether the agency had evaluated the issue with respect to any power plants and, if so, for how many. The EPA official admitted that the agency had evaluated none. I confirmed that there was no such analysis or data in the 2005 rulemaking docket apart from the 2002 analysis.

I asked the EPA officials whether the agency had conducted any analysis to refute the data and conclusions underlying the 2002 analysis. The EPA official admitted that the agency had not. I confirmed that there is no such analysis or data in the 2005 docket apart from the 2002 analysis.

Considering that the agency was proposing to extend the NSPS hourly emissions modification test to EGUs under the NSR program, I asked the EPA officials whether the agency knew how many NSPS modifications had been undertaken by power plants over the lifetime of the program. The EPA official admitted that the agency did not evaluate this issue. I asked the EPA officials how many modifications the agency projected under the NSR program if any one of the proposals were adopted. The EPA official admitted that the agency did not evaluate this issue. I confirmed that there was no analysis or data in the 2005 docket concerning these questions.

I asked the EPA officials whether the agency was aware of *any* instance of a power plant having triggered the NSPS modification provision during the lifetime of the program. The officials declined to respond. Following my insistence, the officials still refused to respond. I confirmed that there is no analysis or data in the 2005 docket disclosing any instance of a modification by an EGU triggering the NSPS modification provision.

I urge Senators at the hearing to ask the witnesses whether they are aware of any *specific* instances of a power plant or other major stationary source having triggered the NSPS modification provision. If so, how frequently does that occur? Did the sources install modern air

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[25] Unless otherwise noted, the responses to these questions were all provided by Mr. William Harnett, who participated in the briefing by telephone from North Carolina. At the time, Mr. Harnett was the Director of the Information Transfer and Program Integration Division in the Office of Air Quality Planning and Standards, Office of Air & Radiation, Environmental Protection Agency.

pollution controls due to the rules governing NSPS modifications? Americans deserve to know whether the NSPS modification provision that S.2662 echoes, but in a more extreme fashion, has ensured installation of modern air pollution controls. The public also deserves to know whether the NSPS modification provision has proven meaningless in practice, as has been my experience, the experience of EPA's enforcement office,[26] and the realization of Bush EPA air office officials who refused to identify a single NSPS modification within the electric power sector.

In sum, in EPA's 2005 NSR proposal, and a subsequent 2007 supplemental NSR proposal to adopt an hourly emissions rate test, 72 Fed. Reg. 26,202 (May 7, 2007), the administrative records for both EPA proposals failed to identify a single instance in which a power plant owner/operator *would* install controls, or would *need* to install controls, under any of the proposed hourly emissions rate tests, when the owner/operator would not also *need* to install controls under the NSR annual, actual emissions test. The NSPS hourly emissions rate test is so extreme and, therefore, ineffective, that in the real world industrial sources simply do not experience hourly potential emissions increases in a manner that would trigger NSPS controls for existing sources. Extending this NSPS approach to the NSR modification program, as S.2662 would do in a more extreme fashion, would thwart the very purposes of the NSR program, result in substantial emissions increases, worsen air quality and harm Americans' health. *See* EPA, Respondent Brief in *New York v. EPA*, D.C. Cir. Case No. 02-1387 (Aug. 9, 2004), at 74 ("the purpose of New Source Review is to require that facilities making changes that increase their emissions meet emission limits that reflect state-of-the-art control technology, analyze the increased emissions from their facilities to ensure that they will not adversely affect air quality, and, in nonattainment areas, offset their emissions increases with emission reduction credits.")

C. EPA's Enforcement Office Has Concluded a 'Maximum Achievable Hourly Pollution' Approach Would Sanction Massive Pollution Increases Like Those Successfully Prosecuted in NSR Enforcement Cases Against Coal-Burning Power Plants.

EPA well knows that maximum achievable emissions tests are a function of potential emissions—that are rarely if ever exceeded: "[t]he 'achievable' test is a measure of the 'potential' emissions of a source ... in the classic and historic sense of the use of that term." Memorandum from Adam M. Kushner, Director of EPA's Air Enforcement Division, Office of Enforcement and Compliance Assurance, to William Harnett, dated August 25, 2005, at 9 (hereinafter "EPA Enforcement Memo," attached to this Testimony). In a case study undertaken by EPA's enforcement office, "the achievable hourly emission rate was calculated to be *more than ten times higher* than the average hourly emission rate in the *five-year period* prior to the change." EPA Enforcement Memo at 3 (emphases added). The more extreme ten-year period in S.2662 would cause facilities' worst achievable pollution rates to be even higher.

A series of utility industry case studies accompanying this 2005 EPA Enforcement Memo, as well as the Memo itself, confirm that hourly emissions rate approaches would result in actual annual emissions increases wildly in excess of existing NSR "significant" emission thresholds. See, *e.g.*, 40 C.F.R. §52.21(b)(23)(identifying "significant" emissions increase

[26] See *infra* section II.C.

thresholds for "modifications" in attainment areas, such as 40 tons per year for NO_x and SO_2). The Bush EPA enforcement office also found that these changes would have produced annual emissions increases well in excess of the "significant" emissions thresholds under a maximum hourly achieved emissions rate test. See EPA Enforcement Memo attachment at 5, 8, 14, 18, 22, 25, 29 & 32). Had SO_2 controls been installed, in contrast, the EGU's *total emissions* – not just the emissions increase magnitude – were assumed to be reduced by 95%. For NOx controls, the assumed reduction was to a BACT level of 0.100 lb/MMBtu. See, *e.g.*, *id.* at 6, 9.

Examining actual emissions data for EGUs from the Clean Air Markets Division, the EPA enforcement office concluded that the maximum hourly achievable emissions rate test proposed in 2005 would have failed to control actual annual emissions *increases* of 50 tpy of SO_2 and 978 tpy of NO_x in one case study (EPA Enforcement Memo attachment, at 10); *13,096 tpy* of SO_2 in another case study (*id.* at 2); 939 tpy of SO_2 and 1,405 tpy of NO_x in another (*id.* at 20); and 1,700 tpy of SO_2 and 507 tpy of NO_x in a fourth case study (*id.* at 27). See also EPA Enforcement Memo at 3. Again, S.2662 is even more extreme; had it been at the law at the time, it would have permitted these same massive emissions increases, and even higher increases.

In the 13,096 tpy example, the annual SO_2 emissions increase that escapes control is *over 327 times* the "significant" emissions threshold for SO_2 that requires pollution controls under the Clean Air Act. As discussed elsewhere, these exempted pollution increase levels are significantly higher than even the major stationary source threshold for new power plants (100 tpy), that EPA continues to recognize should be subject to Best Available Control Technology and Lowest Achievable Emissions Rate. And in many cases, these uncontrolled emissions *increases* are well above the *total* SO_2 and NO_x emissions from EGUs that EPA's Clean Air Interstate Rule would have covered in 2020. In the case study, even though sulfur dioxide emissions increased by 13,096 tons per year, the maximum achievable hourly rate did not increase.[27] *Id.* Attachment to EPA Enforcement Memo, at 2 (Case Study #1) (emphasis added). Based on this analysis, the EPA enforcement office found that "<u>one can only conclude from application of the so-called 'achievable' test that *no 'change' causing an emissions increase . . . at an EGU would trigger NSR. . . .*</u>" *Id.* at 5 (emphasis added).

Similarly, the power plant improvement projects that were the underlying basis of EPA's enforcement lawsuits against Duke Energy for NSR violations, and which (the company argued) did not increase hourly emissions rates,[28] were projected to result in significant increases in actual annual emissions.[29] One of the projects, which included replacing and upgrading the economizer for unit 1 at the Belews Creek Steam Station, was projected to increase annual emissions of SO_2 by 1,319.80-14,909.30 tons, and NO_x by 537.20 tons.[30] A project at the Allen

[27] The enforcement office used actual operating data to perform the case study analyses. EPA Enforcement Memo, at 3.
[28] Br. in Supp. of Duke Energy's Mot. in Limine under the Federal Rules of Evidence at 26, EPA v. Duke Energy, 278 F. Supp. 2d 619 (M.D.N.C. 2003) (No. 1:00CV1262).
[29] Plaintiff's Consolidated Opp. to Duke Energy's Mot. in Limine to Exclude the Testimony of Robert Koppe, Ranajit Sahu, Bruce Biewald, and Philip Hayet at 45-48, EPA v. Duke Energy, 278 F. Supp. 2d 619 (M.D.N.C. 2003) (No. 1:00CV1262).
[30] *Id.* at 46.

Steam Station, which involved replacement of the economizer for Allen Unit 5, was projected to increase annual emissions of SO_2 by 123.30- 14,294.10 tons, and NO_x by 79.40-2,210.90 tons.[31] These projects were expected to improve unit availability and, in the case of the Belews Creek project, improve efficiency (heat rate).[32] They increased annual tons of emissions well above the regulatory (*de minimis*-based) significance thresholds,[33] without undertaking NSR or applying the modern pollution control represented by the statute's Best Available Control Technology, or Lowest Achievable Emissions Rate provisions, to limit those pollution increases.

Analysis of the NSR enforcement cases against coal-fired power plants reveals that *none* of those cases would have been viable under maximum hourly emission rate approaches; indeed, that is precisely why industry was relying upon their hourly-potential emissions increase defenses to avoid liability. *See* EPA Enforcement Mem. at 13 ("This is Duke's, and every other Defendant's, favorite defense in the NSR enforcement cases: we have not expanded capacity and, consequently, NSR was not triggered.") That is also why the government stipulated that the projects at issue in the Duke Energy NSR enforcement case would not have "caused an increase in the maximum hourly rate of emissions at any of Duke's units."[34] Tens of thousands of tons of illegal NO_x and SO_2 emissions increases were at issue in the Duke Energy case, and all of those increases would have been permissible under maximum hourly emission rate approaches —since EPA was not contending there was any maximum hourly rate increase, and was instead alleging significant net emissions increases in actual, annual emissions (the PSD/NSR test) at the units from modifications that resulted in the units' post-change, increased utilization. Thus, it's easy to see why the enforcement office conclude that basing emissions increases only upon increases in

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[31] *Id.* at 45.

[32] Plaintiff's Consolidated Opp. to Duke Energy's Mot. in Limine to Exclude the Testimony of Robert Koppe, Ranajit Sahu, Bruce Biewald, and Philip Hayet at 118-21, EPA v. Duke Energy, 278 F. Supp. 2d 619 (M.D.N.C. 2003) (No. 436-2); Plaintiff's Consolidated Opp. to Duke Energy's Mot. in Limine to Exclude the Testimony of Robert Koppe, Ranajit Sahu, Bruce Biewald, and Philip Hayet at 2-5, EPA v. Duke Energy, 278 F. Supp. 2d 619 (M.D.N.C. 2003) (No. 1:00CV1262).

[33] EPA has established regulatory "significance thresholds," describing the level of actual tons per year increases of air pollutants above which impacts will not be de minimis in nature, and therefore would trigger NSR. See 40 C.F.R. § 52.21(b)(23)(i), (establishing 40 tons per year significance thresholds for NOx and SO2, for example). In Alabama Power Co. v. Costle the D.C. Circuit Court of Appeals, while recognizing the NSR program's focus on minimizing actual annual emissions increases, indicated EPA could (upon making specified rigorous showings) define levels of actual (tons per year) emissions increases which would produce no regulatory benefit under the statute. See Alabama Power, 636 F.2d 323, 360-61, 400 (D.C. Cir. 1979) (describing that authority to craft de minimis exemption is potentially available "when the burdens of regulation yield a gain of trivial or no value. That implied authority is not available for a situation where the regulatory function does provide benefits, in the sense of furthering the regulatory objectives, but the agency concludes that the acknowledged benefits are exceeded by the costs.").

[34] *United States v. Duke Energy Corp.*, Civil Action No. 1:00 CV 1262Order and Final Judgment, at 2 (M.D.N.C. April 15, 2004).

maximum hourly emission rates would be "fatal" to its enforcement cases. See EPA Enforcement Memo, at 13.

Finally, the enforcement office concluded that application of the maximum hourly achievable emissions rate test would be "largely unenforceable." *Id.* at 2. Their analysis found the baseline "achievable" level to be so high that very few changes increasing emissions substantially could possibly result in emissions levels that would surpass it. For example, the enforcement office's first power plant case study found the achievable hourly emission rate to be more than *ten times higher* than the average hourly emission rate in the five-year period prior to the change. *Id.* (emphasis added). Thus, unless the utility were to increase its actual emissions *by an order of magnitude*, it would not be considered a regulated modification under NSR. In the case study, even though sulfur dioxide emissions *increased by 13,096 tons per year*, the maximum achievable hourly rate did not increase. *Id.* Attach. A to EPA Enforcement Memo, at 2 (Case Study #1). Based on this analysis, the enforcement office found that "one can only conclude from application of the so-called 'achievable' test that *no 'change' causing an emissions increase . . . at an EGU would trigger NSR . . . .*" *Id.* at 5 (emphasis added).

A maximum hourly emissions rate test like that in S.2662 or the NSPS program would have exempted the $23 million equipment replacement project undertaken by TVA at Unit 1 of its Cumberland plant, since that project did not experience an increase in maximum achievable or maximum achieved hourly emissions rates.[35] That projected resulted in an NO_x emissions increase of 21,187 tpy—nearly one-and-one-half times the total amount of NO_x emitted annually by all sources in the District of Columbia. 21,187 tpy of NO_x is approximately *530 times* the 40 tpy NO_x *"*significant" emissions threshold for modifications, and nearly *212 times* the 100 tpy statutory threshold for *new* "major emitting facilities."[36]

II. Legislative Analysis: S.2662: The GAIN Act.

S.2662 is much more harmful and irresponsible than the "maximum achievable" pollution tests that EPA has rejected and condemned again and again.

First, S.2662 defines massive increases in actual air pollution not to be "increases" at all, unless a modification increases a facility's maximum hourly emissions rate above the worst pollution rate possible in the prior *ten years*. S.2662, Sec. 2(2) ("a change increases the amount of any air pollutant emitted by such source only if the maximum hourly emission rate of an air pollutant that is *achievable* by such source after the change is higher than the maximum hourly emission rate of such air pollutant that was *achievable* by such source during any hour in the *10-year period* immediately preceding the change.")

The NSPS program, by contrast, defines massive increases in actual air pollution not to be "increases" at all, unless a modification increases a facility's maximum hourly emissions rate

[35] Final Order on Reconsideration in *In re Tennessee Valley Authority*, (EPA Environmental Appeals Board, September 15, 2000).
[36] CAA § 169(1). See 68 Fed. Reg. at 61,272 ("500 tpy is far above any level EPA has ever thought justifiable as *de minimis*. *E.g.*, 40 CFR § 51.166(b)(23)(i) (definition of "significant").")

above the worst pollution rate possible in the prior *five* years. 40 C.F.R. § 60.14(h) ("No physical change, or change in the method of operation, at an existing electric utility steam generating unit shall be treated as a modification for the purposes of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the *5 years* prior to the change.") (emphasis added). By choosing a ten-year period rather than five, S.2662 expands the time period for which facilities can increase actual pollution up to its worst pollution rate possible over a longer time period, calling it no increase when pollution increases substantially and evades pollution controls.

Second, S.2662 dispenses with even that lax, meaningless definition of 'pollution increase' if a facility operator increases emissions above those astonishingly high levels, by claiming it is doing so to "restore, maintain, or improve the reliability of operations at, or the safety of, the source." S.2662, Sec. 2(3).

The NSPS program and its maximum achievable hourly pollution test, by contrast, contains no glaring amnesty for unlimited emissions increases when a facility operator invokes reliability or safety to justify the unlimited increases. That is a more radical feature of S.2662, alone.

A. Scope of Amnesty from Clean Air Act Permitting & Pollution Controls.

First, S.2662's harmful amnesty and loopholes, granting permission to increase dangerous air pollution, are extended to nearly 14,000 major industrial polluting facilities and their industrial equipment across the United States.[37] These include but are not limited to: electric power plants that burn coal, oil and gas; oil refineries; chemical plants; hazardous waste and medical waste incinerators; landfills; iron and steel mills; cement plants; manufacturing facilities; industrial boilers; coal cleaning plants (with thermal dryers); Kraft pulp mills; Portland cement plants; primary zinc smelters; primary aluminum ore reduction plants; primary copper smelters; municipal incinerators; hydrofluoric, sulfuric, or nitric acid plants; lime plants; phosphate rock processing plants; coke oven batteries; sulfur recovery plants; carbon black plants (furnace process); primary lead smelters; fuel conversion plants; sintering plants; secondary metal production plants; fossil-fuel boilers; petroleum storage and transfer units; taconite ore processing plants; glass fiber processing plants; charcoal production plants; and "any stationary source which emits, or has the potential to emit, 250 tons per year or more of a regulated NSR pollutant."[38]

B. Repealing Limits on Significant Air Pollution Increases.

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[37] *See* U.S. EPA, *Proposed Information Collection Request; Comment Request; Part 70 State Operating Permit Program (Renewal)*, 83 Fed. Reg. 45,926 (Sept. 11, 2018) (estimating 13,712 major stationary sources with Title V operating permits under the Clean Air Act). https://www.govinfo.gov/content/pkg/FR-2018-09-11/pdf/2018-19771.pdf.

[38] See, *e.g.*, 40 C.F.R. § 52.21(b)(1) (definition of major stationary source).

Second, S.2662 harmfully amends the Clean Air Act by repealing the law's longstanding regulation of "modifications" that result in significant increases in actual emissions of dangerous air pollution. S.2662 does so by substituting a severely weakened definition of 'emissions increase,' addressing sources' increase only above their worst possible pollution rate in the past ten years; the bill eliminates the longstanding statutory definition of "modification" that is concerned with significant increases in actual emissions of dangerous air pollution. See S.2662, sec. 2 ("For purposes of the preceding sentence, ….").

The legislation permits significant increases of all regulated NSR pollutants: carbon monoxide, nitrogen oxides, sulfur dioxide, particulate matter, PM10, PM2.5, ozone, lead, fluorides, sulfuric acid mist, hydrogen sulfide, total reduced sulfur, reduced sulfur compounds; municipal solid waste landfill emissions; and municipal waste combustor organics, metals and acid gases.[39]

Realize, however, that when these regulated NSR pollutants increase under the bill's amnesty, industries *also* will be able to increase carbon pollution that drives dangerous climate change. They will increase the brain poison, mercury; they will increase cancer-causing pollution like arsenic & benzene. That's because fossil fuel combustion releases these dangerous toxins from smokestacks into America's skies.

C. Authorizing Significant Air Pollution Increases.

Third, the bill adopts a new extreme, irresponsible and harmful definition of air pollution "increase." A "change increases the amount of any air pollutant" only if a facility's worst possible pollution rate after a change, today, is higher than the facility's worst possible pollution rate in the past ten years:

> a change increases the amount of any air pollutant emitted by such source only if the maximum hourly emission rate of an air pollutant that is achievable by such source after the change is higher than the maximum hourly emission rate of such air pollutant that was achievable by such source during any hour in the 10-year period immediately preceding the change.

S.2662, sec. 2. Under the bill, a "change" at an industrial facility could increase its actual air pollution in the real world by two times, five times, ten times or more above what the facility was polluting before the change—and this would not be an "increase" under the bill if that additional air pollution did not exceed the facility's worst *possible* pollution rate in the past ten years. The bill is more extreme than allowing a source to increase dangerous air pollution all the way up to its worst *actual* polluting level in the past ten years; instead, the bill lets polluting facilities increase dangerous air pollution all the way up to its worst *possible* polluting level in the past ten years. The bill does so with the term, "maximum hourly emission rate of an air pollutant that is *achievable* by such source," rather than "achieved" by such source. *Id.* (emphasis added).

[39] See, *e.g.*, 40 C.F.R. § 52.21(b)(23)(i) (regulated NSR pollutants and significant emissions rates).

Indeed, the bill is so extreme that it bases its definition of emissions "increase" on the absurd prospect of a polluting facility exceeding the "maximum hourly emission rate of such air pollutant that was achievable by such source *during any hour* in the 10-year period." *Id.* (emphasis added). That would mean the single filthiest level of air pollution that the plant was *capable* of emitting during any hour, including when the plant had zero air pollution controls; when any air pollution control equipment was turned off; when the plant was experiencing malfunctions that caused air pollution to spike; or when the plant was flaring gases uncontrolled from smokestacks to avoid accidents.

Through these approaches, S.2662 would let polluting equipment and facilities increase dangerous air pollution to higher levels than they ever have polluted, worsening air quality and evading air pollution controls that today's law requires. This testimony discusses real world examples of the stunning magnitude of increases in air pollution that the bill's amnesty would newly authorize, exempting huge pollution increases from the Clean Air Act's air pollution control requirements and air quality analyses. Astonishingly, the bill just *declares* these are not pollution increases at all, even though pollution has increased in American communities by hundreds or many thousands of tons per year or more. Or millions of tons per year of carbon pollution.

Realize, too, that S.2662 would unleash significant air pollution increases after repealing limits on this significant increases under the Clean Air Act. But S.2662 does not create any legal *limit* on those potential emissions increases; rather, a facility's physical *ability* to pollute more is the only actual limit in the real world. That is stunning & alarming, inconsistent with 50 years of air pollution regulation in America.

D. Authorizing Even *More* Significant Air Pollution Increases.

The legislation is not content with allowing industrial facilities to increase dangerous air pollution all the way up to the facility's worst *possible* pollution rate in the past ten years. Section 2(B) of S.2662 dispenses with even that meaningless constrain on pollution increases, by allowing polluting facilities to *exceed* the facility's worst possible pollution rate during any hour in the past ten years:

> (B) Notwithstanding subparagraph (A), the term 'modification' does not include a change at a stationary source that is designed—
>
> > (i) to reduce the amount of any air pollutant emitted by the source per unit of production; or (ii) to restore, maintain, or improve the reliability of operations at, or the safety of, the source,

Sections (B)(i) & (ii) in the bill become the exceptions that swallow the grossly lax rule in (A). The loopholes created here allow truly unlimited increases in air pollution, all the way up to a facility's physical capacity to pollute, following a change.

First, the word "designed" in (B) is revealing: so long as a facility operator claims that a change at a stationary source was "designed" to do one of the two things delineated in (B)(i) or (B)(ii), the change need not actually *do* either one of those things. That is, if a change were

"designed" to "reduce the amount of any air pollutant emitted by the source per unit of production," the bill would not penalize any actual failure to reduce any air pollutant per unit of production. And yet the bill would say there has been no "modification," allowing facility operators to evade air pollution control equipment, pollution offsets, air quality analyses and other NSR safeguards.

Second, so long as a facility operator claims that a change at a stationary source was designed to "reduce the amount of *any air pollutant* emitted by the source per unit of production," S.2662, sec. 2(B)(i), the post-change facility could increase *any other air pollutant* per unit of production. So, the facility could reduce, say, carbon dioxide per unit of production, while increasing lead, smog-forming nitrogen oxides, deadly $PM_{2.5}$ or sulfuric acid mist. And yet, again, the bill would say there has been no "modification," allowing facility operators to evade air pollution control equipment, pollution offsets, air quality analyses and other NSR safeguards.

Third, the bill permits the reduction of any amount of any air pollutant emitted by the source per unit of production, however trivial, to increase dangerous total air pollution by so much that the increases *exceed* the facility's worst possible pollution rate during any hour in the past ten years. Again, the bill would say there has been no "modification," allowing facility operators to evade air pollution control equipment, pollution offsets, air quality analyses and other NSR safeguards.

It's hard even to conceive of a business that would rationally undertake changes at a facility in order to *increase* the amount of pollution per unit of production. That is because higher costs per unit of production would be associated with factors increasing pollution per unit of production: greater fuel consumption; greater waste; increased raw materials and more. Because businesses can lower these costs by reducing pollution per unit of production, it's reasonable to conclude business will seek to do this for production-related changes.

That is a very far cry, however, from overall air pollution levels going down. If a facility operator reduces air pollution per unit of production by a marginal amount, certain production increases or increases in hours of operation will increase total amounts of air pollution from the facility. Federal courts long have recognized this reality, while affirming that NSR is concerned with *overall* air pollution increases, not pollution per unit of production:

> The fact that a firm's decision to introduce new, more efficient machinery may lead the firm to decide to increase the level of production, with the result that, despite the new machinery, overall emissions will increase.

Puerto Rican Cement v. EPA, 889 F.2d 292 (1st Cir. 1989). EPA has consistently shared this same understanding about the core purposes of the NSR safeguards:

> For example, assume the emissions unit at the widget factory that is emitting 10 pounds an hour but has historically operated at 40 percent capacity due at first to operating cost, but with age, reduced efficiency and reliability. Under [an hourly emissions rate test], the owner could modernize the unit, thus lowering the operating costs and increasing

> efficiency and reliability. *This change will allow the owner to use the machine at much higher levels (e.g., more hours per day or week) than it had in the past. As a result, actual emissions (measured in [tons per year]) could more than double due to the increase in utilization even though hourly potential emissions remain the same*."[40]

It is no consolation to Americans or air quality or the environment that the total, overall increases in dangerous air pollution that they are experienced resulted from facility decisions following reductions in the amount of air pollution per unit of production.

Finally, S.2662 authorizes increases in total amounts of dangerous air pollution by so much that the increases may *exceed* the facility's worst possible pollution rate during any hour in the past ten years, so long as the facility operator claims a change is being undertaken "to restore, maintain, or improve the reliability of operations at, or the safety of, the source." S.2662, sec. 2(B)(ii). This allows truly unlimited increases in air pollution, all the way up to a facility's physical capacity to pollute, following a change. Once again, the bill would say there has been no "modification" following these massive air pollution increases, allowing facility operators to evade air pollution control equipment, pollution offsets, air quality analyses and other NSR safeguards.

Again, a facility operator need only claim that a change was "designed" to "restore, maintain, or improve" reliability or safety, not that the change did so. Moreover, this loophole invites further abuse based upon a defining feature of the NSR permitting program: it is self-initiated by regulated entities. That is, facility operators decide whether emissions increases resulting in a modification have occurred; they decide whether a change qualifies for an exemption; they would decide if a change were "designed" to "to restore, maintain, or improve the reliability of operations at, or the safety of, the source." Only then, following a conclusion that a modification will occur, do facility operators submit permit applications to regulators responsible for issuing NSR permits.

This means that state and local regulators responsible for issuing most NSR permits, or EPA regulators responsible for issuing a small minority of NSR permits, may never know that a facility operator wrongly determined, *illegally* determined, that a change was not a modification because it was allegedly "designed" to "restore, maintain, or improve" reliability or safety.

For good reason, the Clean Air Act never has allowed runaway increases in dangerous air pollution, merely because a business claimed reliability or safety justified worsening air quality and hurting Americans surrounding the facility. We know that air pollution travels far and knows no boundaries, hurting Americans in downwind states many hundreds of miles away. The Clean Air Act does not and should not exempt polluting facilities that perform valuable services for society, whether that is providing electricity or manufacturing medicine. Americans expect polluting facilities to clean up their own pollution and not dump that pollution, or significantly increase that pollution, into America's skies. S.2662 badly fails those expectations.

[40] 61 Fed. Reg. 38,250, 38,269 (July 23, 1996) (emphasis added).

E. S.2662's Strawman Constraint on Emissions Increases Does Not Protect Americans.

There is an exception to sec. 2, (B)(i) or (ii), when a "change would be a modification as defined in subparagraph (A) and the Administrator determines that the increase in the maximum achievable hourly emission rate of a pollutant from such change would cause an adverse effect on human health or the environment." This attempt at a constraint on emissions increases nonetheless fails to protect American or U.S. air quality.

The first, and most obvious, thing to note about this provision is that increases in dangerous air pollution all the way up to facilities' worst *possible* polluting level in the past ten years, do not result in an opportunity for the EPA Administrator to determine if the pollution increases "cause an adverse effect on human health or the environment." This determination simply does not apply to changes addressed in (A); indeed, by implication, S.2662 admits that enormous air pollution increases permissible under (A) could "cause an adverse effect on human health or the environment."

Second, if there is such a determination by the Administrator under (B), changes simply revert to the grossly lax amnesty created in (A), wherein increases in dangerous air pollution may happen all the way up to facilities' worst *possible* polluting level in the past ten years. And the Administrator cannot then determine if the worsened air pollution caused "an adverse effect on human health or the environment."

More important, the seeming constraint on unlimited emissions increases is a strawman in the legislation. The reality is that state and local permitting authorities issue the vast majority of NSR permits in the U.S., not EPA or the "Administrator." EPA issues NSR permits only rarely, primarily in tribal areas or in Puerto Rico. This means that the "Administrator" would not have an opportunity to "determine" pursuant to sec. 2(B) that the "increase in the maximum achievable hourly emission rate of a pollutant from such change would cause an adverse effect on human health or the environment." Today, when state and local permitting authorities issue NSR permits, EPA officials are not required to review them; and the EPA Administrator virtually never reviews such permits.

Moreover, as noted earlier, the NSR permitting process is one self-initiated by regulated entities. That is, facility operators decide whether emissions increases resulting in a modification have occurred; they decide whether a change qualifies for an exemption; they would decide if a change were "designed" to "reduce the amount of any air pollutant emitted by the source per unit of production," or "restore, maintain, or improve the reliability of operations at, or the safety of, the source." Accordingly, if a source were to decide it qualified for the (B)(i) or (B)(ii) exemptions, the EPA Administrator likely would never even learn about this, to even have the opportunity to determine if there were "an adverse effect on human health or the environment." And after those adverse effects had occurred, it would be too late to undo the damage.

Accordingly, the strawman safeguard in sec. 2(B) does not remedy the many damages actively created, and the adverse effects on human health and the environment authorized, by S.2662.

F. S.2662's "Clarification" Fiction.

Sections 2, 3 and 4 in S.2662 are titled "CLARIFICATION" in a patent and unsuccessful attempt to pretend that the loopholes and amnesty created therein are allowed under the current Clean Air Act. This is wildly false, as a direct comparison between the text in S.2662 and the text in Clean Air Act sections 111(a)(4), 169(2)(C) and 171(4) plainly show. One may wonder why the legislation resorts to such obvious fictions, but the answer is pretty clear: the Trump administration EPA has proposed regulations to roll back NSR safeguards for power plants, in a manner substantially similar to S.2662, especially section 2 of the bill.[41] The "clarification" pretense in S.2662 seeks to bolster the lawfulness of the Trump EPA regulatory attack on the Clean Air Act, to no avail.[42] Republican Senators co-sponsoring S.2662, and Republican House members co-sponsoring H.R. 1327 and 1328, understand that sweeping, detailed amendments to the Clean Air Act are necessary to weaken the statute as dramatically as these bills and the Trump EPA rulemaking proposal all would attempt.

III. The February, 2018 House Hearing & H.R. 1327 & 1328.

On February 14, 2018, the Subcommittee on Environment, for the House Energy and Commerce Committee, held a hearing entitled, "New Source Review Permitting Challenges for Manufacturing and Infrastructure."[43] I testified at that hearing,[44] opposing two House bills referred to the Energy & Commerce Committee: H.R. 3127[45] & H.R. 3128.[46] These are the House companion bills to S.2662. Another witness for today's Senate hearing, Mr. Jeffrey Holmstead, also testified at the February, 2018 House hearing.[47]

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[41] See "Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program," 83 Fed. Reg. 44,746 (Aug. 31, 2018).

[42] See generally, Joint Comments of Environmental and Public Health Organizations on the New Source Review Regulatory Changes Proposed With EPA's Proposed Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program (Oct. 31, 2018) (93-page comments, plus attachments, comprehensively demonstrating the unlawfulness of the August 31, 2018 EPA proposal), Docket No. EPA-HQ-OAR-2017-0355.

[43] https://energycommerce.house.gov/committee-activity/hearings/hearing-on-new-source-review-permitting-challenges-for-manufacturing-and.

[44] https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Testimony-Walke-EE-Hrg-on-New-Source-Review-Permitting-Challenges-for-Manufacturing-and-Infrastructure-2018-02-14.pdf.

[45] https://www.congress.gov/115/bills/hr3127/BILLS-115hr3127ih.pdf.

[46] https://www.congress.gov/115/bills/hr3128/BILLS-115hr3128ih.pdf.

[47] https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Testimony-Holmstead-EE-Hrg-on-New-Source-Review-Permitting-Challenges-for-Manufacturing-and-Infrastructure-2018-02-14_0.pdf.

A. The Claim that NSR Should Not Apply Unless Maximum Hourly Emissions Rates Increase.

Following the hearing, the Honorable Frank Pallone submitted several questions for me to answer. One asked about the written testimony of Mr. Holmstead, in which he testified that:

> the best approach would be to make clear that there is not a "major modification" under NSR if there is not a "modification" as defined under NSPS. Thus, companies (and EPA) would evaluate a project to determine whether it would increase the maximum hourly emission rate at the plant. If not, then the project does not trigger NSR.[48]

Congressman Pallone asked if I agreed. I explained that I did not. First, I made many of the same points that I do in Section II of today's testimony. I explained why the NSR safeguards are concerned with protecting Americans from significant increases in actual air pollution, while the NSPS program fails badly at that task, by allowing facilities to increase dangerous air pollution up to the worst polluting levels at which they possible could have polluted, in the previous 5-year period.

I noted further that I agree, instead, with the position and action taken by Mr. Holmstead and the Bush administration EPA in 2002, when Mr. Holmstead headed the agency's Office of Air & Radiation. There, EPA rejected use of a maximum hourly emission rate test for the NSR program because it "could sanction greater actual emissions increases to the environment, often from older facilities, without any preconstruction review." 67 Fed. Reg. 80,185, 80,205 (December 31, 2002). That approach allowed emissions increases to be calculated based on "the unit's pre-change and post-change potential emissions, measured in terms of hourly emissions." *Id.*. at 80,205. EPA's analysis "showed that typical source operation frequently does result in actual emissions that are below allowable emission levels," *id.*, meaning very significant increases in actual emissions could result without exceeding allowable emission levels. *See also, id.* ("actual emissions increases resulting from unreviewed projects could go largely undocumented until a [Prevention of Significant Deterioration/New Source Review] review is performed by a new or modified facility that ultimately must undergo review. By that time, however, a violation of an [air quality] increment could have unknowingly occurred."); *id.* ("We agree that a potential-to-potential test for major NSR applicability could lead to unreviewed increases in emissions that would be detrimental to air quality.").

Mr. Holmstead and the Bush EPA understood that these unreviewed emissions increases run counter to the purposes of the NSR program. In EPA's August 2004 response to the legal challenges to the 2002 NSR rule revisions, for instance, EPA concedes that "the purpose of the NSR provisions is . . . to limit emissions *increases* resulting from physical or operational changes." *See* EPA, Respondent Brief in *New York v. EPA*, D.C. Cir. Case No. 02-1387 (Aug. 9, 2004), at 73-74 (emphasis in original); *see also id.*, at 74 ("the purpose of New Source Review is to require that facilities making changes that increase their emissions meet emission limits that reflect state-of-the-art control technology, analyze the increased emissions from their facilities to ensure that they will not adversely affect air quality, and, in nonattainment areas, offset their

[48] *Id.*, at 6.

emissions increases with emission reduction credits.") EPA "also expressed concern about the environmental consequences associated with [maximum hourly emissions rate] provisions. For one, you could modernize your aging facilities (restoring lost efficiency and reliability while lowering operating costs) without undergoing preconstruction review, while increasing annual pollution levels as long as hourly potential emissions did not change." 67 Fed. Reg. at 80,205.

Indeed, in the context of the 2002 NSR rulemaking, EPA itself recognized that focusing the program on increases in potential hourly emissions would not adequately protect co-called pollution "increments," as required by the Clean Air Act. For example, in the rulemaking proposal, the agency observed:

> Finally, one of the most troubling side effects of [a potential-to-potential hourly emissions test] is that it could ultimately stymie major new source growth by allowing unreviewed increases of emissions from modifications of existing sources to consume all available increment in PSD areas. After the minor source baseline date has been established in an area, all increases, whether subject to major NSR or not, consume increment. As illustrated in the example above, under the [the potential-to-potential hourly emissions] test an old grandfathered source could experience a "significant" net increase in annual actual emissions, yet it would not necessarily be subject to review. Since increment consumption after the minor source baseline date is calculated based on actual emissions increases, the "minor" modification of the grandfathered source would still consume increment. If a major new source with state-of-the-art emission controls proposes to locate in an area in which the increment has been consumed in this manner, it would be barred from building unless and until the increment problem was resolved. At the same time, older plants would continue to be able to make changes resulting in significant unreviewed, and possibly uncontrolled, actual emission increases.

61 Fed. Reg. 38,250, 38,270 (Jul. 23, 1996). And later, in its Technical Support Document for the 2002 NSR Rule, EPA continued in a similar vein:

> In the preamble, we discussed our concerns about the environmental effects that could result from the general use of an applicability test based on the CMA Exhibit B approach. We indicated that the approach, based on increases in hourly potential emissions, could result in unreviewed emissions increases on a tons per year basis from modifications of existing sources consuming all available increment in PSD areas. … We continue to believe that the "actual-to-projected actual" test – and not the CMA Exhibit B test – is the more appropriate method for measuring actual emissions increases that result from a physical or operational change, while not counting for applicability purposes.…
>
> With regard to the comment that the CMA Exhibit B approach would not have an impact on increment consumption because permitting, emissions inventories, and SIP's consider potential emissions, we believe that this conclusion overlooks the fact that the regulatory increment consumption process is based on changes in "actual emissions." PSD increment analyses performed with potential emissions tend to be screening analyses, which are accepted if the results show that no violations will result. Hence, while many analyses may be done initially with potential or allowable emissions, PSD applicants always have the

> ability to perform a more refined analysis should the initial analysis reveal problems meeting the increment. That is, actual emissions increases ultimately may need to be (and in some cases have been) used to determine whether an increment is being violated. This is one reason why we believe that it is important to retain an applicability process that triggers NSR on the basis of actual emissions increases.

Technical Support Document for the Prevention of Significant Deterioration and Nonattainment Area New Source Review Regulations, Nov. 2002, Docket No. A-90-37, at I-6-9.

It is also instructive to know about the emissions impact analysis that Mr. Holmstead and the Bush EPA included in the docket for the 2002 Bush EPA NSR rulemaking that rejected an hourly emissions test for NSR. There was no instance in EPA's analysis in which an electric generating unit ("EGU") would *not* have been allowed to increase its hourly or annual emissions by at least 50% under an hourly emissions rate test. Fifty percent increases were on the low end under EPA's study, however, with emissions increases over 100% and 200% more the norm.

EPA and Mr. Holmstead included this study in the docket for the 2002 NSR rulemaking, and offered no agency criticism of the data or its conclusions. The agency similarly relied upon the study to support its 2002 final rule, rightly rejecting a maximum hourly emissions rate approach. EPA provided no *other* data to contradict the emission's impact data or conclusions—either in the docket for the 2002 rulemaking *or at any time since then*. The only data in the possession of the agency thus belie any suggestion that emissions would not be allowed to increase very significantly, using a maximum hourly emissions rate test instead of the current PSD/NSR test, based on increases in actual, annual emissions to the environment. Allowing actual, annual emissions to increase by a factor of many times even the major stationary source thresholds plainly allows significantly greater environmental and public health hazards to occur than under the prevailing PSD/NSR emissions increase test for modifications.

B. The Claim That There Would Be No Increases in Air Pollution "Even if the NSR Program Disappeared Completely Tomorrow."

The Honorable Frank Pallone also asked me, following the hearing, about a claim that Mr. Holmstead made during his oral testimony, that "even if the NSR program disappeared completely tomorrow," that "there would not be any increase in air pollution at all." Congressman Pallone asked if I agreed.

I responded that Mr. Holmstead's claim was badly, demonstrably wrong. First, I reiterated the Bush EPA's acknowledgment, when Mr. Holmstead headed EPA's Office of Air & Radiation, that merely *weakening* the NSR program, much less eliminating it, would result in increased air pollution. In a 2002 Bush EPA rule issued by Mr. Holmstead's Office of Air & Radiation, EPA rejected use of a grossly weaker maximum hourly emission rate test for the NSR program because it "could sanction greater actual emissions increases to the environment, often from older facilities, without any preconstruction review." 67 Fed. Reg. 80,186, 80,205 (December 31, 2002). I went on to make many of the same points made above in sections II and IV.A, including the Bush EPA enforcement office's damning indictment of the maximum hourly

emissions increase test and the massive emissions increases that had resulted from power plants violating NSR.

I noted further that neither Mr. Holmstead's written or oral testimony explained what laws, regulations, emissions limits or standards would prevent any increases in air pollution from *every* emissions unit, or even *any* emissions units, at each major stationary source in the U.S. subject to the NSR and PSD programs. The burden lies with anyone making such a claim, erroneous as it is, to demonstrate with particularity, and comprehensively, what laws, regulations, emissions limits or standards would prevent increases in air pollution from every PSD/NSR-covered emissions unit "if the NSR program disappeared completely tomorrow." As noted, Mr. Holmstead's testimony during the House hearing did not even attempt to do so.

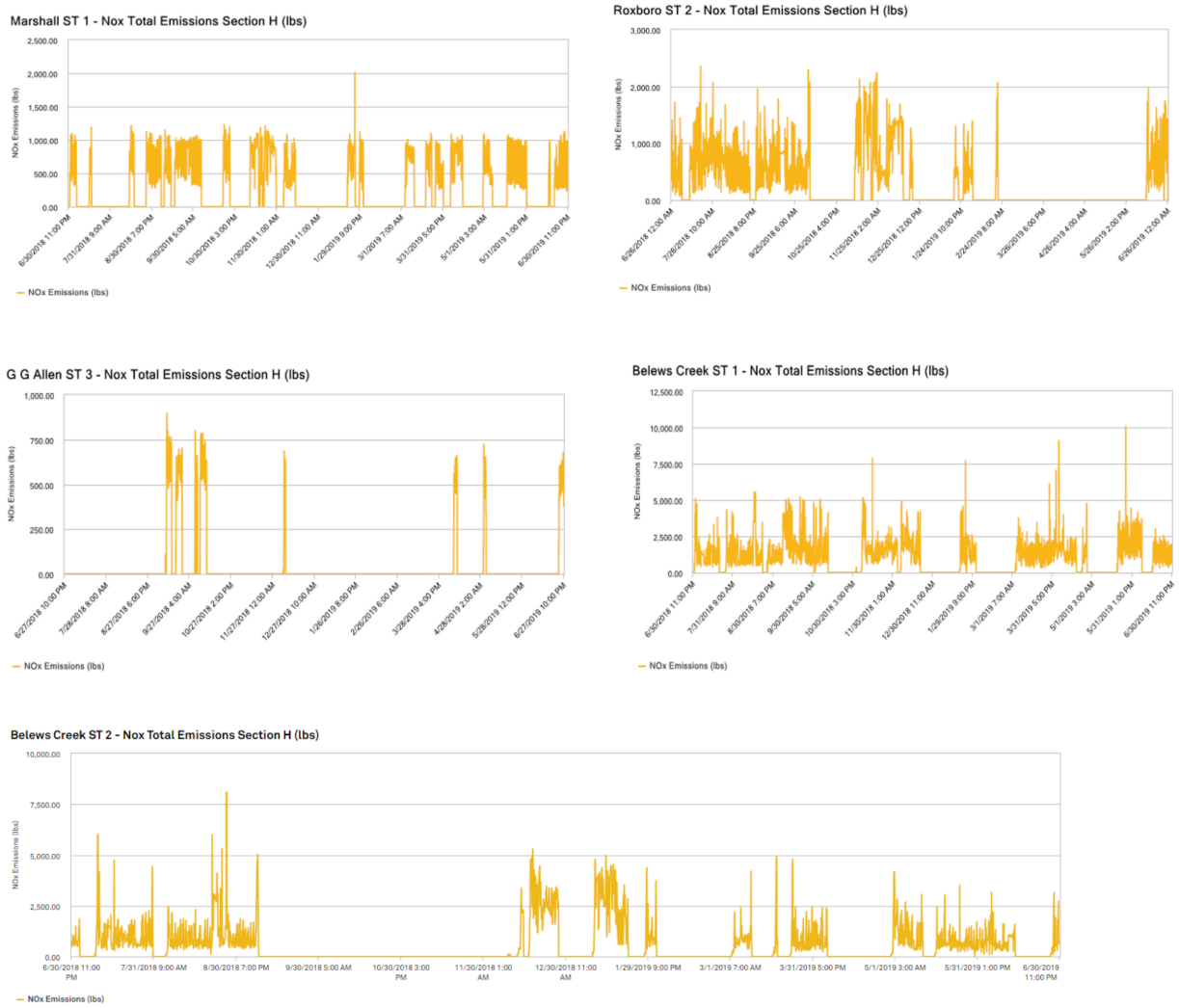
The reasons for this failure are obvious: the very structure and requirements of federal, state and local clean air laws do not restrict all increases in air pollution. Few if any emissions units at major stationary sources are subject to hard caps on total annual emissions tied to current emissions levels, in a way that would guarantee "there would not be any increase in air pollution at all" "even if the NSR program disappeared completely tomorrow." No federal Clean Air Act standards impose hard caps on emissions in the manner just described; to the extent that there are caps on annual emissions from individual major stationary sources under some federal standards, like the Cross State Air Pollution Rule, facility operators may purchase and trade allowances to exceed even those so-called 'caps' with actual emissions increases. Nor do State Implementation Plans or individual federal, state or local permits cap total emissions to prevent any and all increases in actual, annual air pollution above current levels. These regulatory tools generally limit emissions *rates,* rather than prohibiting any increases in air pollution, meaning that physical and operational changes would be allowed to result in significant emissions increases "if the NSR program disappeared completely tomorrow."

There are too many examples to show that increases in air pollution occur every day in the U.S., even with the NSR program in place. I will highlight just a few, to show how wrong any claim to the contrary is. In September of this year, EPA released emissions data for coal-burning power plants nationwide, showing that "nine of the top 10 emitters of sulfur dioxide (SO2) *increased* discharges last year, in several cases by double-digit percentages."[49] For example, Luminant's Martin Lake power plant in Texas "belched almost 56,200 tons of SO_2, up 54% from 2017."[50] The Gerald Gentleman plant in Nebraska increased SO_2 emissions by 31%, and the Independence power plant in Arkansas increased SO_2 emissions by 24%.

Second, the following graphs of NO_x emissions from five coal-burning power plant units owned and operated by Duke Energy belie any suggestion that there are other, adequate limits on air pollution increases, "even if the NSR program disappeared completely tomorrow." As these graphs show, there are wild swings in air pollution increases occurring at industrial facilities, today, with very significant emissions increases above a source's lowest observed rate. These lowest observed rates frequently correspond to full operation of air pollution control devices,

[49] Sean Reilly, "AIR POLLUTION: EPA about-face lets emissions soar at some coal plants," *Greenwire* (Sept. 26, 2019) (emphasis added).
[50] *Id.*

with pollution spikes often occurring when operators turn off pollution control devices. The reasons for the NO_x emissions spikes in these graphs are not known.



Source: S&P Global Market Intelligence, Power Plant Profile: Unit Hourly Operations, data drawn from U.S. EPA Continuous Emissions Monitoring System.

Finally, of course, the Bush EPA enforcement office's own experience with illegal and massive air pollution increases from a variety of industrial sectors squarely contradicts any suggestion that are other, adequate limits on any and all air pollution increases, "even if the NSR program disappeared completely tomorrow."[51] Similarly, House testimony by the former EPA air enforcement director under the Clinton and Bush administrations, soundly refutes industry

[51] EPA's national NSR enforcement initiatives have found widespread violations that resulted in significant air pollution increases among coal-burning power plants; petroleum refineries; plants that manufacture sulfuric and nitric acid, which are used in fertilizer, chemical and explosive production; glass manufacturers; and cement manufacturers. See generally https://www.epa.gov/enforcement/air-enforcement.

claims that "most of the things" required under NSR enforcement consent decrees are things the companies are required to do under other Clean Air Act programs, anyway.[52]

I have been a Clean Air Act attorney for nearly 25 years, representing private corporations, trade associations, the U.S. EPA, NRDC and other public health and environmental groups. During that time, I have never heard any government official, or attorney in private, public or public interest practice—prior to the February, 2018 House hearing—even suggest that there are "laws and regulations, in place, at the state and/or federal levels, that would prevent any and all stationary sources in the U.S. from experiencing 'any increases at all,' that would otherwise be regulated by NSR." I am not aware of any such laws or regulations, certainly not those that "would prevent any and all stationary sources in the U.S. from experiencing 'any increases at all,' that would otherwise be regulated by NSR."

I urge Senators at the hearing to ask the witnesses what *specific* laws, regulations, emissions limits or standards would prevent *any* increases in air pollution from *every* emissions unit at each major stationary source in the U.S. subject to the NSR and PSD programs. The plain truth is there are no such laws, regulations, limits or standards, and it is false to suggest otherwise.

IV. S.2662 & the Efficiency Fiction.

Proponents of H.R. 1327 and H.R.1328 at the House hearing, and co-sponsors of S.2662 in their press release accompanying the bill,[53] invoke "energy efficiency" as a justification for the bills' amnesty and loopholes from Clean Air Act safeguards. As used in this manner, however, "efficiency" is a seriously misleading label employed generally to mask higher air pollution levels that would be allowed to result, while escaping clean up, as a result of the bills' proposed amnesty and loopholes. The expression is being used as code for the following concept: an improved emissions rate of pollution per unit of fuel, raw material or output (*e.g.*, lbs/MBtu of SO_2, pounds of NO_x per widget).[54]

Under existing NSR rules, a facility modification that decreases its pollution rate (*i.e.*, becomes more efficient), does *not* require pollution controls so long as total actual emitted pollution levels decrease, are maintained, or even increase by no more than specified levels (*e.g.*, 40 tons per year). This is so, of course, because NSR requires pollution control measures only for activities that increase pollution levels above generous 'significance' threshold levels, like 40 tons per year. This is true efficiency, desirable efficiency, that should result in lower pollution rates *and* lower overall air pollution levels for Americans.

In stark contrast, S.2662 weakens the NSR safeguards to the point of meaninglessness, in order to allow higher air pollution levels (that may or may not result from improved emission

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[52] See Buckheit Testimony, *supra*, at 13-15.
[53] Senators Introduce Growing American Innovation Now (GAIN) Act, https://www.epw.senate.gov/public/index.cfm/2019/10/senators-introduce-growing-american-innovation-now-gain-act.
[54] See, *e.g.*, S.2662, sec.2(B)(i).

rates) to escape clean-up measures, under the guise of "efficiency." Cloaking this agenda in the garb of efficiency is not only objectionable,[55] it also contradicts numerous prior EPA understandings and court decisions on this very issue:

> Virtually every modernization or upgrade project at an existing industrial facility which reduces inputs and lowers unit costs has the concurrent effect of lowering an emissions rate per unit of fuel, raw material or output. Nevertheless, it is clear that these major capital investments in industrial equipment are the very types of projects that Congress intended to address in the new source modification provisions. … Adopting a policy that automatically excludes from NSR any project that, while lowering operating costs or improving performance, coincidentally lowers a unit's emissions rate, would improperly exclude almost all modifications to existing emissions units, including those that are likely to increase utilization and therefore result in overall higher levels of emissions.[56]

> The argument that only changes that increase a unit's emissions rate can trigger the NSR modification provisions has been rejected by two courts of appeals. As noted, see supra note 1, in *Puerto Rican Cement*, the First Circuit rejected a claim that modifications to a cement kiln, which made production more efficient and decreased the hourly emissions rate but could increase the plant's utilization rate, such that actual emissions to the atmosphere might increase, were exempt from PSD. The company argued that the project fell under the PSD regulatory exclusion for changes that result in an "increase in the hours of operation or in the production rate." See 889 F.2d at 298. Similarly, in *WEPCO*, where the company was making "like-kind" replacements of components to restore the original design capacity of the plant, there was no increase in emissions per unit of output; rather, for PSD purposes, the emissions increase was attributable to increased utilization. The Seventh Circuit rejected the company's reliance on the exclusion for increased hours of operation/rates of production. See 893 F.2d at 916 n. 11.[57]

For these same reasons, which EPA and federal courts have reaffirmed time and time again, as well as others discussed herein, the Clean Air Act should not exempt from NSR control measures, significant increases in harmful air pollution that result from marginal improvements in emissions rates, that occur with no increase in emissions per unit of output or that restore the original design capacity of a unit or plant. The obvious point in all these situations is that the air is getting dirtier by significant amounts, and pollution loadings are increasing to surrounding communities. The statutory purposes of the NSR program call for responsible pollution control measures to mitigate or offset these harmful pollution increases.[58]

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[55] It is objectionable, of course, because efficiency improvements that yield the expected, added benefit of reduced overall air pollution levels is what Congress and EPA should be promoting.
[56] Memorandum from John S. Seitz, Director, EPA OAQPS, to EPA Regional Air Directors, "Pollution Control Projects and New Source Review (NSR) Applicability," (July 1, 1994), at 11.
[57] Detroit Edison Applicability Determination Detailed Analysis, at 5-6, n.1, Enclosure to Letter from Francis X. Lyons, EPA Regional Administrator, to Henry Nickel, Counsel for the Detroit Edison Company (May 23, 2000), at 12, n.9.
[58] The first four purposes of the PSD provisions are (1) to protect public health and welfare from any potential adverse effect that EPA believes may reasonably be anticipated to result from air

V. S.2662 Allows Emissions Increases from *Single* Power Plants Greater Than Total Emissions From All Coal-Fired Power Plants in Many Individual States.

The significant air pollution increases authorized by S.2662 are so vast, and the universe of industrial facilities allowed to increase dangerous pollution so extensive, that the only way to put the damage in context is to use air pollution from entire states for comparison. I use the examples of coal-burning power plants that undertook illegal modifications; increased NSR regulated air pollutants by enormous amounts; evaded required air pollution controls, air quality analyses and other NSR safeguards; and were determined by EPA's enforcement office *not* to have exceeded maximum hourly achievable emissions rates, despite these enormous pollution increases. In other words, these examples are among the ones that S.2662—and the Trump EPA rollback of NSR—would allow to increase emissions and evade pollution controls. See, *supra*, at II.C.

In the following tables, I compare a 21,187 ton per year increase in smog-forming nitrogen oxides, NO_x, from a *single* power plant unit, TVA Unit 1, to the *total* nitrogen oxides emitted by *all* coal-burning power plants in all states represented on the Senate Environment & Public Works Committee. I also compare the 13,096 *increase* in sulfur dioxide from a *single* power plant unit examined in the EPA enforcement office case study, *supra*, at II.C, to the *total* sulfur dioxide emitted by *all* coal-burning power plants in all states represented on the Senate Environment & Public Works Committee.

Air Pollutant	Pollution *increase* from *one* actual coal-burning electric generating unit (EGU), in tons per year, allowed by bill's loophole	Total coal EGU emissions (tpy) in Alabama	% that one coal EGU *increase* due to bill = out of *total* Alabama coal EGU emissions	Total coal EGU emissions (tpy) in Alaska	% that one EGU *increase* due to bill = out of *total* Alaska coal EGU emissions	Total coal EGU emissions (tpy) in Arkansas	% that one coal EGU *increase* due to bill = out of *total* Arkansas coal EGU emissions	Total coal EGU emissions (tpy) in Delaware	% that one coal EGU *increase* due to bill = out of *total* Delaware coal EGU emissions
NO_x	21,187 tpy	18,127	117%	0	---	20,490 tpy	103%	132 tpy	16,050%
SO_2	13,096 tpy	10,552	124%	0	---	51,720 tpy	25%	441 tpy	2,970%

pollution notwithstanding attainment of the NAAQS; (2) to enhance air quality in areas of special natural, recreational, scenic, or historic value; (3) to ensure that economic growth will occur in a manner consistent with the preservation of existing air resources; and (4) to ensure that emissions from any source in any state do not interfere with any other state's plan for preventing significant deterioration of air quality. 42 U.S.C. § 7470(1)-(4). This language reveals that Congress enacted the NSR & PSD provisions out of concern for air quality in each state, in each air shed within each state, and in each "special" area within each air shed, and the welfare (climate) across the country.

Air Pollutant	Pollution *increase* from *one* actual coal-burning electric generating unit (EGU), in tons per year, allowed by bill's loophole	Total coal EGU emissions (tpy) in Illinois	% that one coal EGU *increase* due to bill = out of *total* Illinois coal EGU emissions	Total coal EGU emissions (tpy) in Indiana	% that one EGU *increase* due to bill = out of *total* Indiana coal EGU emissions	Total coal EGU emissions (tpy) in Iowa	% that one coal EGU *increase* due to bill = out of *total* Iowa coal EGU emissions	Total coal EGU emissions (tpy) in Kentucky	% that one coal EGU *increase* due to bill = out of *total* Kentucky coal EGU emissions
NO_x	21,187 tpy	29,670	71%	64,598	33%	14,257	149%	44,856	47%
SO_2	13,096 tpy	57,287	23%	68,449	19%	18,384	71%	55,090	24%

Air Pollutant	Pollution *increase* from *one* actual coal-burning electric generating unit (EGU), in tons per year, allowed by bill's loophole	Total coal EGU emissions (tpy) in Maryland	% that one coal EGU *increase* due to bill = out of *total* Maryland coal EGU emissions	Total coal EGU emissions in Massachusetts	% that one coal EGU *increase* due to bill = out of *total* Massachusetts coal EGU emissions	Total coal EGU emissions in Mississippi	% that one coal EGU *increase* due to bill = out of *total* Mississippi coal EGU emissions	Total coal EGU emissions in New Jersey	% that one coal EGU *increase* due to bill = out of *total* New Jersey coal EGU emissions
NO_x	21,187 tpy	5,290	400%	0	---	6,158	344%	1,093	1,938%
SO_2	13,096 tpy	10,779	121%	0	---	3,078	425%	1,336	980%

Air Pollutant	Pollution *increase* from *one* actual coal-burning electric generating unit (EGU), in tons per year, allowed by bill's loophole	Total coal EGU emissions (tpy) in New York	% that one coal EGU *increase* due to bill = out of *total* New York coal EGU emissions	Total coal EGU emissions (tpy) in North Dakota	% that one coal EGU *increase* due to bill = out of *total* North Dakota coal EGU emissions	Total coal EGU emissions (tpy) in Oklahoma	% that one coal EGU *increase* due to bill = out of *total* Oklahoma coal EGU emissions	Total coal EGU emissions (tpy) in Oregon	% that one coal EGU *increase* due to bill = out of *total* Oregon coal EGU emissions
NO_x	21,187 tpy	582	3,640%	34,660	61%	11,464	185%	1,660	1,276%
SO_2	13,096 tpy	2,295	571%	40,785	32%	24,820	58%	2,308	567%

Air Pollutant	Pollution *increase* from *one* actual coal-burning electric generating unit (EGU), in tons per year, allowed by bill's loophole	Total coal EGU emissions (tpy) in Rhode Island	% that one coal EGU *increase* due to bill = out of *total* Rhode Island coal EGU emissions	Total coal EGU emissions (tpy) in Vermont	% that one EGU *increase* due to bill = out of *total* Vermont coal EGU emissions	Total coal EGU emissions (tpy) in West Virginia	% that one coal EGU *increase* due to bill = out of *total* West Virginia coal EGU emissions	Total coal EGU emissions (tpy) in Wyoming	% that one coal EGU *increase* due to bill = out of *total* Wyoming coal EGU emissions
NO_x	21,187 tpy	0	---	0	---	40,241	53%	33,508	63%
SO_2	13,096 tpy	0	---	0	---	45,818	29%	31,024	42%

Source for data: U.S. EPA, *Coal-fired Characteristics and Controls: 2018*, https://www.epa.gov/airmarkets/power-plant-data-highlights.

These data show that S.2662 weakens the Clean Air Act so severely that the bill's 'maximum achievable hourly pollution' approach would have allowed a *single* power plant modification to *increase* smog-forming nitrogen oxides, NO_x, by an amount representing 33% to 16,050% of *all* smog-forming NO_x emissions from *all* coal-burning power plants in each state represented on the Committee. 21,187 tons per year of NO_x emissions represents this percentage of total NO_x emissions from each Committee state with coal-burning power plants: Alabama (117%); Arkansas (103%); Delaware (16,050%); Illinois (117%); Indiana (33%); Iowa (149%); Kentucky (47%); Maryland (400%); Mississippi (344%); New Jersey (1,938%); New York (3,640%); North Dakota (185%); Oklahoma (185%); Oregon (1,276%); West Virginia (53%); and Wyoming (63%).

Similarly, these data show that S.2662 weakens the Clean Air Act so much that the legislation's 'maximum achievable hourly pollution' approach would have allowed a *single* power plant modification to *increase* sulfur dioxide pollution, SO_2, by an amount representing 19% to 2,970% of *all* SO_2 emissions from *all* coal-burning power plants in each state represented on the Committee. 13,096 tons per year of SO_2 emissions represents this percentage of total SO_2 emissions from each Committee state with coal-burning power plants: Alabama (124%); Arkansas (25%); Delaware (2,970%); Illinois (23%); Indiana (19%); Iowa (71%); Kentucky (24%); Maryland (121%); Mississippi (425%); New Jersey (980%); New York (571%); North Dakota (32%); Oklahoma (58%); Oregon (567%); West Virginia (29%); and Wyoming (42%).

Of course, these astounding emissions increases could have been even larger, depending upon the scale, extent and cost of presently illegal power plant NSR modifications that would be authorized by S.2662. Recall too, that sec. 2(B) of S.2662 dispenses with the 'maximum achievable hourly' emissions rate approach, and allows pollution increases *higher than* a facility's worst possible hourly pollution rate, if done in the name of reliability or safety.

The point here is not to say that any one power plant or industrial plant *will* increase emissions by these exact amounts under the bill's sweeping amnesty. Rather, the point is to demonstrate the sheer scale and magnitude of dangerous air pollution increases that the bill's amnesty would *allow*, based upon what we know already from actual examples analyzed by EPA. This alarming outcome happens because:

(1) Just *two* individual power plant units *have* increased dangerous NO_x & SO_2 emissions by 21,187 tons per year and 13,096 tons per year, respectively, without even increasing maximum hourly emissions rates over the prior ten years—comfortably qualifying for the bill's loophole that evades air pollution controls and damages air quality; and
(2) the bill's loophole extends to nearly 14,000 major industrial emitters across the United States.

Realize that these two power plant units analyzed by EPA violated the Clean Air Act by undertaking modifications that significantly increased harmful emissions, while evading

installation of modern air pollution controls and analysis of air quality impacts. Such modern air pollution controls typically reduced NSR regulated air pollutants by 95 to 99%. To a shocking degree, there are still very many coal-burning power plants in the United States, today, that lack modern air pollution control equipment for smog-forming nitrogen oxides, or sulfur dioxide, or both. I include six charts in an appendix to my testimony that show the locations and sizes of coal-burning power plants in the U.S. that lack advanced air pollution controls for these two critical air pollutants.

S.2662 would repeal the longstanding Clean Air Act safeguards that these two units violated. The bill's new amnesty would *authorize* the massive air pollution increases that these illegal activities caused. The bill would *sanction* these units' evasion of modern air pollution control & required air quality analyses. The bill would extend this amnesty to nearly 14,000 major industrial polluters across America, including hazardous waste and medical waste incinerators, oil refineries, chemical plants, iron and steel foundries, cement plants and more. And finally, the bill would create amnesty from air pollution control measures for dangerous pollution increases from *existing* facilities that far exceed the level of air pollution from *brand new* facilities that the Clean Air Act requires to be controlled. The 1977 Clean Air Act amendments' grandfathering would become grandfathering on steroids, with nearly 14,000 major industrial polluters across America granted congressional permission to increase harmful air pollution to a degree never contemplated by any previous legislation in this Committee.

VI. Critics Have Not Provided Independent, Empirical Proof that New Source Review Impedes Efficiency, Reliability or Safety Improvements.

To a remarkable degree, political and industry attacks on the NSR program have trafficked in rhetoric, assertion and anecdote, unsubstantiated by verifiable evidence or facts. I am aware of no peer-reviewed studies substantiating these attacks. This dynamic is especially true when critics and opponents assert that the NSR program discourages investments and activities that would result in net environmental benefits, compared to the status quo. The Trump administration has issued two deregulatory reports targeting the New Source Review safeguards. The Trump EPA's 13783 Report, for example, contends that "[i]n some circumstances, the NSR progress discourages the construction of new facilities or modifications of existing ones that could result in greater environmental improvements."[59]

There is not so much as a footnote or any other evidence to back this claim; it is raw assertion. The 13783 Report backs neither the 'discouragement' claim nor the 'greater environmental improvements' claim with any proof or verifiable facts. It is equally important to acknowledge that the 13783 Report credited only commenters that sought to weaken these public health and clean air safeguards. Numerous commenters opposed rolling back the safeguards, but the 13783 Report does not even deign to mention those objections and perspectives by ordinary Americans. *Id.* Surely the burden of proof should be on interests seeking to weaken clean air,

[59] U.S. EPA, *Final Report on Review of Agency Actions That Potentially Burden the Safe, Efficient Development of Domestic Energy Resources Under Executive Order 13783* (Oct. 25, 2017), at 2-2 ("13783 Report").

public health and environmental safeguards, before amending the Clean Air Act or EPA regulations.

A Trump Commerce Department report targeting NSR suffers from the same lack of evidence or independently verifiable facts.[60] It is not so much a report as a compendium of complaints and demands for deregulation. It is a litany of assertions from industry comments that themselves are self-serving contentions rather than evidence. Neither of these Trump administration documents provides any factual basis for legislation, certainly none that weakens and worsens clean air, public health and environmental protections.

Leading industry complaints about NSR fare no better on the evidentiary score. In an article entitled *EPA's New Source Review Program: Time for Reform*, co-authored by one of my fellow witnesses, Mr. Holmstead, the claim is made that "recent changes in the NO_2, SO_2, fine PM, and ozone NAAQS have further complicated the NSR process, resulting in permitting delays and, in some cases, the decision by industry to defer or cancel projects."[61] Following this last inflammatory charge, the authors drop a footnote, which reads in relevant part: "For example, the Baton Rouge Area Chamber reported that four major industrial projects were either put on hold or redirected to another location after EPA proposed to revise the ozone NAAQS in December 2015."[62]

I read this claim when the Baton Rouge Area Chamber first made it, and invited the Chamber to substantiate that claim and to identify, publicly, the "four major industrial projects." They refused. After other industry lobbyists took up and used this same example, repeatedly, I challenged the Baton Rouge Area Chamber to identify the four projects. Again, they refused. I have reached the conclusion that there are no such projects or, if there are, there are other factors influencing the project decisions—location, general economic conditions, tax incentives, available labor, financing, the possible list is long—and the supposed project developers are unwilling to submit their accusations blaming the Clean Air Act to the most basic scrutiny, to the point of refusing to disclose the identity of the projects or the accusing companies.

A similar phenomenon—eschewing actual evidence, relying on assertion or speculation—surrounds industry suggestions that NSR has prevented greater emissions reductions and health and environmental improvements:

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[60] See generally, U.S. Commerce Department, *Streamlining Permitting and Reducing Regulatory Burdens for Domestic Manufacturing* (Oct. 6, 2017).

[61] Art Fraas, John Graham & Jeff Holmstead, *EPA's New Source Review Program: Time for Reform* 47 Environmental Law Reporter 10026, 10031 (2017) (hereinafter, Fraas *et al.)*; see also*, id.* at 10028 ("discussions with industry sources suggest that the cost of emissions offsets effectively prohibits the siting of major new industrial plants in certain [nonattainment] areas").

[62] *Id*., at 10031, n. 36.

- "Thus, it has arguably been more economic in some cases to continue to operate relatively old, inefficient, and high-polluting plants than to install new facilities or upgrade existing facilities with better pollution control technology."[63]
- "To the extent this has occurred, NSR review has had the perverse effect of delaying reductions in pollutants such as SO_2 and NO_x."[64]

"Arguably" and "to the extent this has occurred" provide no reasonable basis for legislation. Left unsaid in these criticisms, of course, is the reality that industrial facilities always may decrease emissions, and upgrade facilities with better pollution control technology to reduce emissions, so long as overall emissions do not increase significantly. Criticisms that lay blame with NSR for this not happening deserve to be looked behind; invariably one will find there an unmentioned objective to *increase* emissions of one or more regulated air pollutants by significant amounts, and to evade controls and other safeguards for those increases.

To its credit, the Fraas *et al.* article does not argue that the weakening reforms it advocates would achieve the same or greater health & environmental benefits. It says simply the regulatory program would still be allowed "to achieve significant environmental results,"[65] which of course is in the eyes of the industry reform beholders. Like many similar critiques of the NSR program, this article's reform proposals tend to gloss over the emissions increases that the proposed reforms would allow.

It's worth drawing attention to some of the internal inconsistencies and cross-purposes associated with competing NSR "reform" proposals. For example, the Fraas *et al.* article seeks to dispense with air pollution offsets within the same air shed—pointing to putatively more cost-effective opportunities to reduce air pollution transported from long distances—while rollback reforms such as H.R. 3127, H.R. 3128, and S.2662 would allow large industrial polluters like coal-burning power plants to massively *increase* air pollution transported over long distances.[66]

Finally, the former director of EPA's Air Enforcement Division has testified in the House about his extensive experience with NSR enforcement cases, and the dangers and abuses that S.2662 would produce by allowing safety and reliability projects to gain amnesty for unlimited emissions increases:

> For most sources subject to the NSR requirements an "intent of the operator" test is unenforceable. A refiner who adds 5 percent capacity may claim that the overall intent of the project was to improve reliability and safety, and the added capacity was incidental. Such a claim would be difficult, if not impossible, to determine objectively

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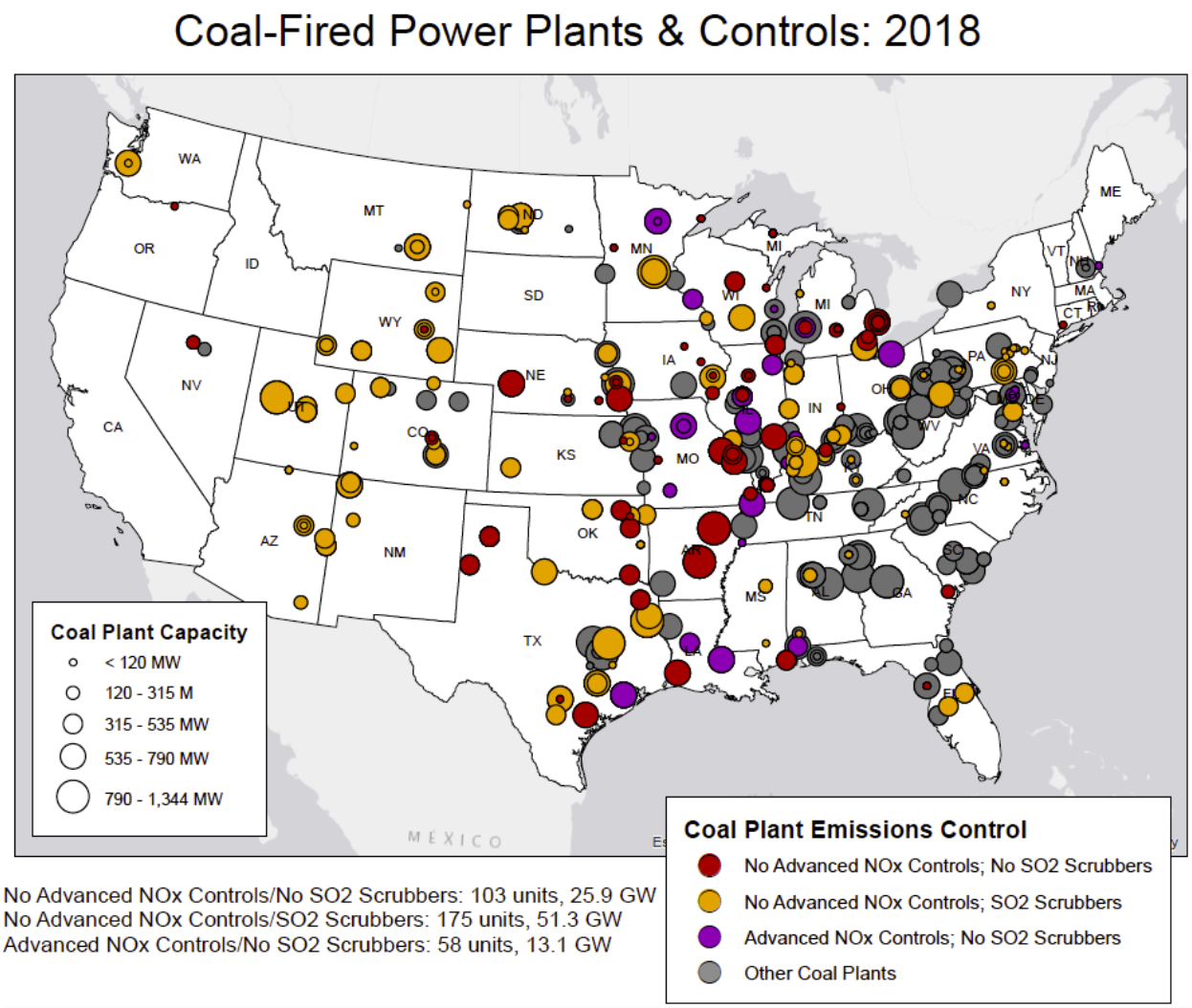
[63] Fraas, *et al.*, 47 ELR at 10030, n.27. This article cited "evidence" backing this claim in an EPA 2001 NSR report prompted by then-Vice President Cheney's energy task force. But that EPA report itself lacks evidence to support the claim, and is itself an example of a government report simply repeating self-serving industry assertions as evidence. See U.S. EPA, New Source Review Report to the President (2002).
[64] *Id.* at 10030.
[65] *Id.*, at 10027.
[66] Fraas, *et al.*, 47 ELR at 10035.

> and certainly could not be ascertained without highly intrusive investigations. For utilities, the reason they engage in life extension programs is **to restore, maintain or improve the reliability or safety of the source.** And so, this provision, as most of the discussion draft, is not a clarification of the modification rule, but a straightforward elimination of those parts of the modification rule that are most likely to impact aged and poorly controlled coal-fired power plants.[67]

No acceptable NSR "reform" should give an affirmative answer to the question posed at the top of this testimony: will it let industry pollute more? This Committee should reject S.2662 and any appeals for reforms that would let industries pollute more, by significantly higher amounts, and in the process, evade air pollution controls and pollution offsets in areas already experiencing unsafe air quality. Moreover, the large pollution increases authorized by the legislation would exacerbate worsening air quality in downwind states. This would make it impossible for these downwind states to deliver safe air to their citizens. These states would continue to violate health-based national ambient air quality standards for pollutants like ground-level ozone, or smog. This would compel the states to crack down further on in-state air pollution sources within their control that are not causing the problems, when the problems are caused by pollution increases from upwind states. S.2662 would severely and irresponsibly worsen these well-known problems. Americans deserve better. Americans deserve Senators rejecting this harmful legislation.

[67] Testimony of Bruce C. Buckheit, before the House Committee on Energy and Commerce Subcommittee on Environment, Hearing on Legislation Addressing New Source Review Permitting Reform (May 16, 2018) (emphasis in original) ("Buckheit Testimony"), https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Testimony-Buckheit-EE-Hrg-on-Legislation-Addressing-New-Source-Review-Permitting-Reform-2018-05-16.pdf.

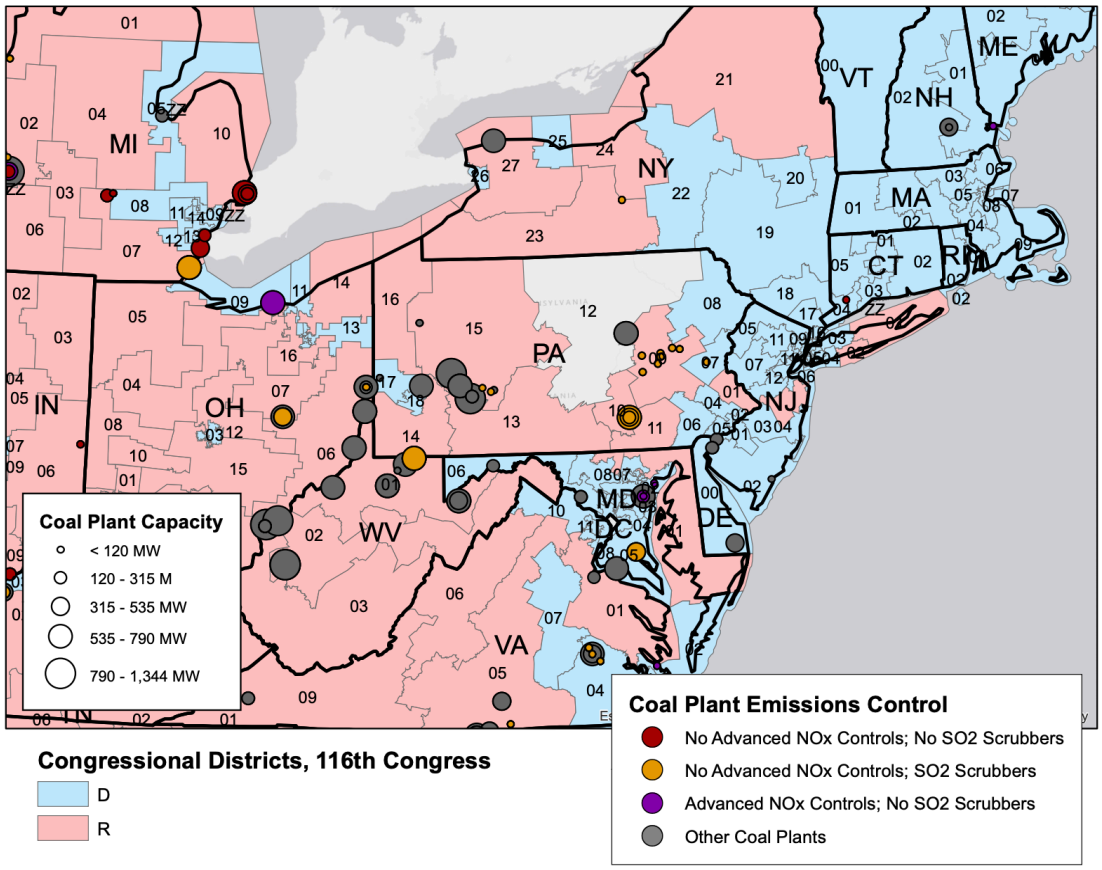
Appendix A



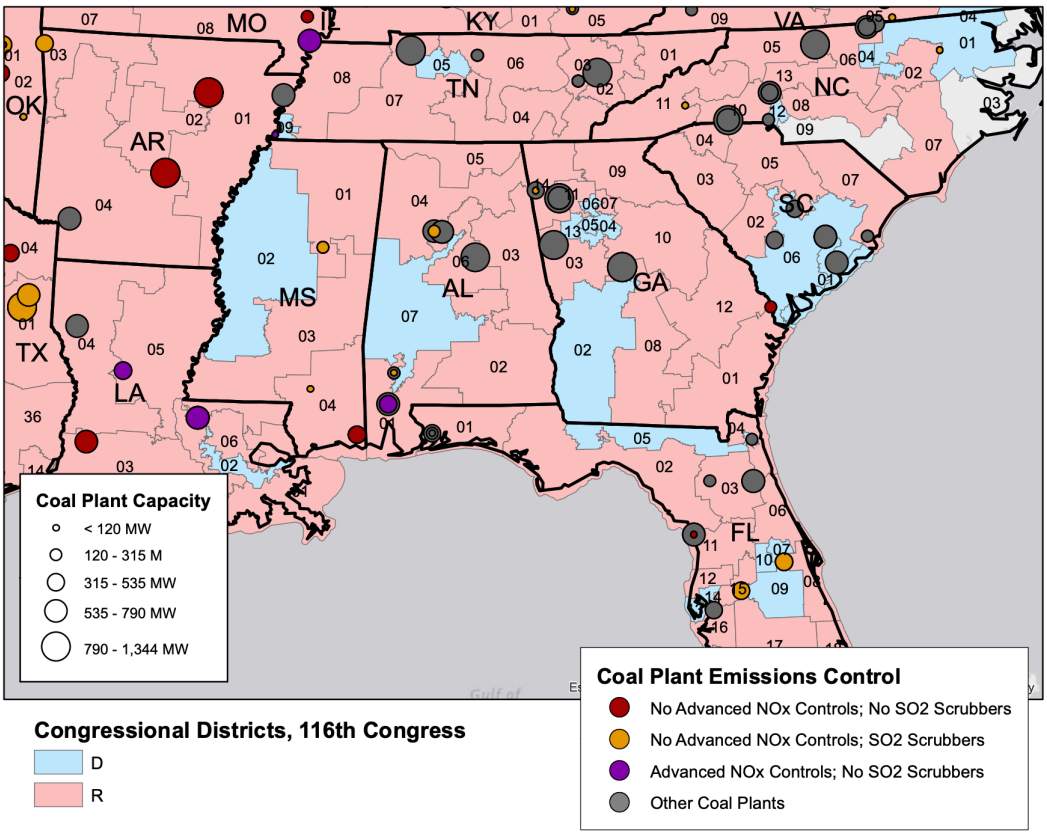
No Advanced NOx Controls/No SO2 Scrubbers: 103 units, 25.9 GW
No Advanced NOx Controls/SO2 Scrubbers: 175 units, 51.3 GW
Advanced NOx Controls/No SO2 Scrubbers: 58 units, 13.1 GW

Source for data: U.S. EPA, *Coal-fired Characteristics and Controls: 2018*, https://www.epa.gov/airmarkets/power-plant-data-highlights.

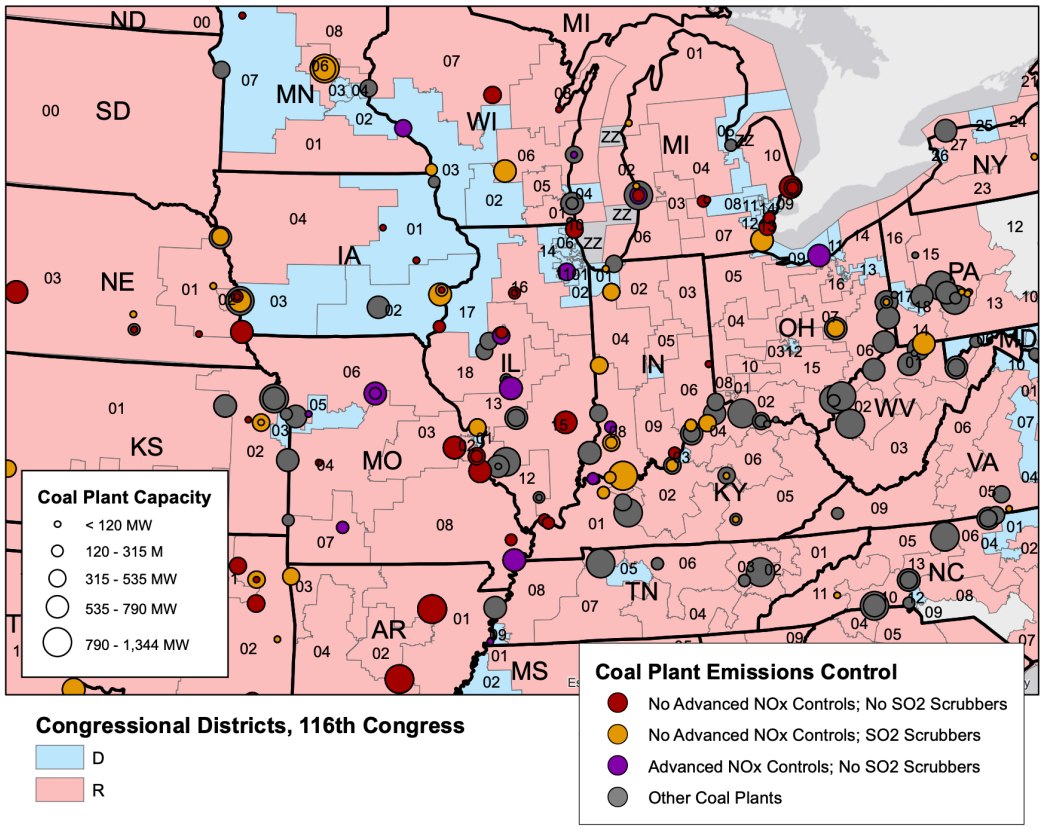
Coal-Fired Power Plants & Controls: 2018



Coal-Fired Power Plants & Controls: 2018



Coal-Fired Power Plants & Controls: 2018



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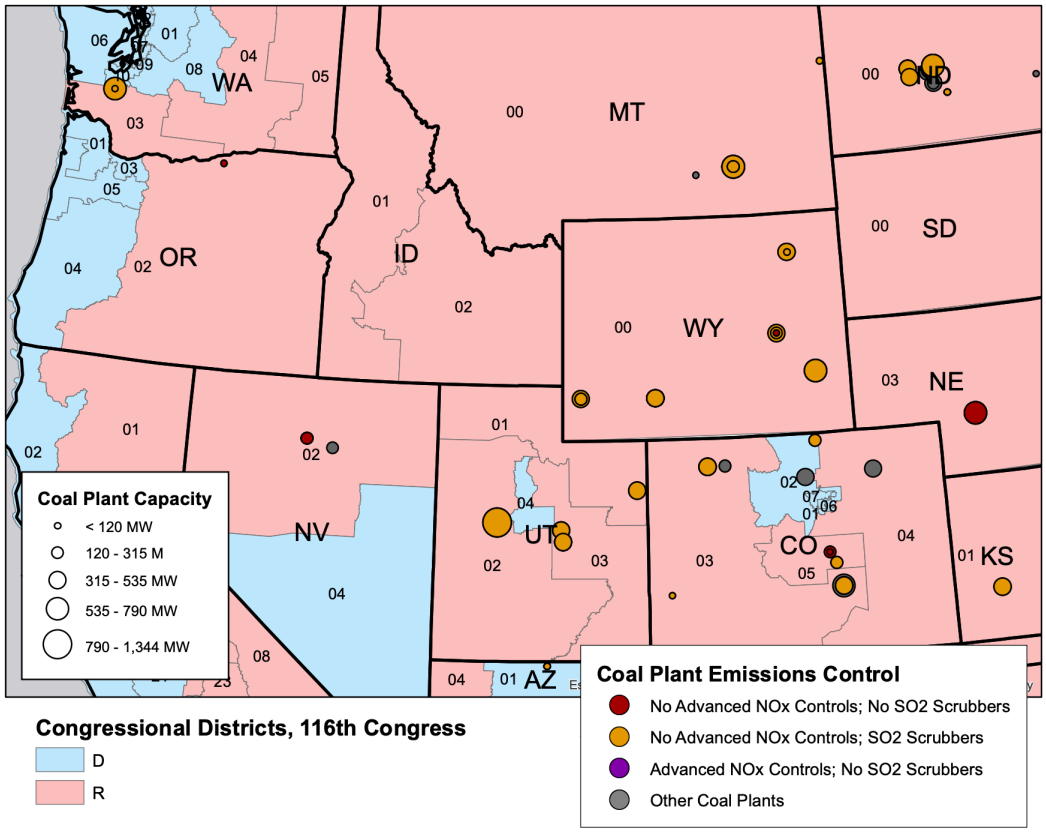

Coal-Fired Power Plants & Controls: 2018